Annual Report of the Department of Industries, Bombay Province 1939-40.

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ANNUAL REPORT OF THE DEPARTMENT OF INDUSTRIES, BOMBAY PROVINCE, FOR THE YEAR 1939-40.

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ANNUAL REPORT OF THE DEPARTMENT OF INDUSTRIES, BOMBAY PROVINCE, FOR THE YEAR 1939-40.

CHAPTER I.

GENERAL INDUSTRIAL OUTLOOK DURING THE YEAR.

(i) Review of General Conditions.

As mentioned in the opening paragraph of this Department's Report for the year 1938-39, the commodity prices declined sharply in that year. Since then right up to the beginning of the present war in September 1939 there has been no appreciable improvement in the commodity prices. During the first eight months of the year 1939, i.e., the period before the war, exports were greater in value than during the same period of 1938. The same remarks apply to imports. The outbreak of the war in September 1939 naturally affected greatly the trade position. The prices of commodities jumped up appreciably, but this rise was short-lived. During this war period the exports increased as compared to the same period of last year and the imports decreased as compared to the same period of last year. Generally speaking it is correct to say that the purchasing power of the agriculturists continued to be depressed during the year under report.

2. **Number of Factories.**—The total number of factories in 1938 and 1939 continued to increase as compared with previous years. The increase, as already stated in paragraph 5 of the Annual Report of this Department for the year 1937-38, was attributable more to the extension of the Factories Act to many of the smaller industrial establishments already in existence in this Province, rather than to the establishment of new factories.

The comparative figures of the number of perennial and seasonal factories in the calendar years 1936, 1937, 1938 and 1939 are given below :—

Year.	No. of factories on register.	Number of working factories.		
		Perennial.	Seasonal.	Total.
1936	1,879	952	659	1,611
1937	2,109	1,139	657	1,796
1938	2,810	1,768	727	2,495
1939	3,460	2,357	763	3,120

3. **Consumption of Electric Energy for Industrial Purposes.**—The data regarding consumption of electric power for industrial purposes is given below :—

Territory.	Number of concerns furnishing information.	Units (in lakhs) of electricity supplied to industrial establishments in		
		1937–38.	1938–39.	1939–40.
Bombay City and Bombay Suburban ..	3*	4,147·56	4,233·18	3,851·82
Northern Division	10†	176·56	268·16	409·37
Central Division	11	21·39	22·92	26·14
Southern Division	5	8·00	9·12	11·04
Total ..	29	4,353·51	4,533·38	4,298·37

4. **Industrial Production.**—The available statistics of output of some of the more important organised industries are presented in the table below. It will be seen that there is an all-round increase in the production of all commodities mentioned below, except in the case of paper and manganese. There is a marked increase in the case of woollen and worsted yarn and piecegoods due to supplies for the Defence Department—

Industry.	Unit of production.	Production.			Percentage increase or decrease of	
		1937–38.	1938–39.	1939–40.	Column 4 over column 3.	Column 5 over column 4.
1	2	3	4	5	6	7
Cotton (woven goods)	Millions of lbs.	527	551	495	+4·55	−10·16
‡ Woollen and worsted yarn and piece-goods (including Hosiery) ..	Thousands of lbs. ..	1,523	1,523	2,997	Nil.	+97·04
‡Paper ..	Tons ..	4,299	4,523	4,064	+5·23	−10·14
Match ..	Thousands of gross ..	4,359	4,193	4,319	−3·81	+3·00
Sugar ..	Tons ..	59,954	48,874	58,969	−18·47	+20·64
Mining (Manganese)	,, ..	59,764	63,760	57,372	+6·69	−10·02

* Figures of one concern, i.e. Bombay Electric Supply and Tramways Company Ltd. are for calendar year and the figures for the group of Tata Hydro-Electric Works are for the year from July to June.

† Figures of one concern are for calendar year.

‡ Figures are for calender year.

5. **New Floatations in the Province.**—The statement below gives an idea of the progress of the Joint Stock enterprise during the last five years. It will be observed that during the year there was a net increase in the total authorised capital of the existing companies on the register—

Year.	Companies registered.	Companies which became defunct.	Net increase in the total number of companies.	Net increase or decrease in the authorised capital of existing companies Rs. (000).
1935-36	168	60	108	—31,28
1936-37	164	74	90	+77,03
1937-38	137	87	50	+1,26,83
1938-39	138	115	23	+11,88
1939-40	151	99	52	+3,39,70

Among the new floatations referred to above, there were two silk mills with an authorised capital of Rs. 7 lakhs, one hosiery mill with an authorised capital of Rs. 3 lakhs, one oil mill with an authorised capital of Rs. 1 lakh, one flour, rice and oil mill with an authorised capital of Rs. 1·35 lakhs, 11 companies connected with the cinema industry with a total authorised capital of Rs. 79·45 lakhs, 4 sugar producing companies with a total authorised capital of Rs. 46 lakhs, one company for quarrying marbles with an authorised capital of Rs. 5 lakhs, 1 engineering concern with an authorised capital of Rs. 1 lakh, 6 electric undertakings with a total authorised capital of Rs. 22 lakhs, 1 glass factory with an authorised capital of Rs. 3 lakhs, two companies for manufacturing vegetable ghee and other vegetable products with a total authorised capital of Rs. 16 lakhs, one company for manufacturing starch with an authorised capital of Rs. 25 lakhs, two firms for manufacturing batteries with an authorised capital of Rs. 6 lakhs, three companies for manufacturing bricks, tiles and other articles from clay with a total authorised capital of Rs. 21 lakhs, two firms for manufacturing rubber goods with an authorised capital of Rs. 2 lakhs, one firm for manufacturing bicycles with an authorised capital of Rs. 25 lakhs, 10 firms of manufacturing chemists and druggists with a total authorised capital of Rs. 128·7 lakhs, making a total autorised capital of Rs, 392·5 lakhs.

During the same period, 1 cotton mill with a paid up capital of Rs. 5·86 lakhs, 1 firm connected with cotton trade with a paid up capital of Rs. 5 lakhs, 2 spinning and weaving factories with a total paid up capital of Rs. 43·3 lakhs, 1 flour mill with a paid up capital of Rs. 6 lakhs went into liquidation.

(ii) BRIEF REVIEW OF IMPORTANT INDUSTRIES OF THE PROVINCE.

6. **Cotton Mill Industry.**—This industry did not fare well during the year. Up to the outbreak of the war, production greatly outstripped demand and prices of cloth and yarn fell to unproductive levels. Stocks increased rapidly, and night shift working had to be considerably curtailed. The outbreak of hostilities rapidly changed the situation and speculative purchases at a rise in prices took place up to the end of November, but margins did not increase for the reason that the rise in price of cotton outstripped the rise in the price of cloth and yarn. From November onwards, the position deteriorated rapidly and cotton prices fell consistently, and mills again found themselves in difficulties. The total number of mills in the Province increased by one to 178. The industry had to bear enhanced manufacturing costs owing to the rise in the values of all imported stores and the Urban Immovable Property Tax. A general strike lasting six weeks broke out in Bombay on the 3rd of March 1940 on the question of dearness allowance, but this gave some relief to the local stock position. Towards the close of the year, it was reported that price concessions had to be granted in order to facilitate the movements of goods into consumption. The financial results of mills were, in most cases, worse than during the previous year.

7. **Woollen Mills and Woollen Industry.**—The unsettled conditions in Europe from the beginning of the year followed by the outbreak of war gave a fillip to the woollen industry in the Province. Large orders were placed by the Supply Department with the Woollen Mills for the supply of Army Blankets. Local production of yarn and piece goods including hosiery, increased considerably from 1,521,498 lbs. in 1938 to 2,997,113 lbs. in the calendar year 1939. The decline in value of imports of woollen goods continued during the year 1939, being Rs. 42·5 lakhs as against Rs. 95 and Rs. 158·8 lakhs during the years 1938 and 1937 respectively.

8. **Gold Thread Industry.**—There does not appear to be any appreciable change in the condition of the industry over that of last year. Internal competition and economic depression continued to prevail. There appear to be some prospects for the industry as the imports from foreign countries into India have declined considerably. It is hoped that this market would be met from local production.

9. **Cigarette Industry.**—There has been practically very little change in this industry. Local production and imports into India have shown very little increase. Progress, if any, is in favour of imports into India increasing by Rs. 2·42 lakhs over the previous year's figures.

10. **Gas Mantle Industry.**—The industry as a whole is reported to have done well. The value of imports of gas mantles into Bombay was Rs. 89,094 as against Rs. 61,520 in the last year.

11. **Chemical Industry.**—The chemical industry except the heavy chemical industry did fairly well during the year under review. The number of factories coming under the Factories Act was 24 as against 23 in the previous year. The value of chemicals imported into Bombay was Rs. 1,51,24,340 as against Rs. 92,43,761 in the last year, which shows that there was a very considerable increase in the import of chemicals during the year under report.

12. **Sugar Industry.**—The number of sugar factories worked on the vacuum pan system was 8 and the number of Khandsari sugar factories was 8 as against 8 in the last year. Out of the 8 Khandsari factories only two worked during the year. The output of the sugar factories amounted to 58,958 tons as against 48,878 tons in the last year. The sugar produced by the two Khandsari sugar factories amounted to 11 tons and 4 cwts. The imports of sugar into Bombay showed a very considerable increase from 12,560 tons valued at Rs. 16,17,650 in the last year to 96,690 tons valued at Rs. 1,18,82,218 during the year under report.

13. **Match Industry.**—The number of factories which worked during the year was 8. The aggregate production of all the factories was 43,19,000 gross boxes. In addition to above, one factory worked up to 9th August 1939 and produced 700 gross boxes. The imports of matches continued to be negligible as usual.

14. **Oil Mills.**—The industry as a whole made good progress as in the last year. The number of mills coming under the Factories Act stood at 112 as against 100 in the last year. The exports of oil from the Port of Bombay showed an increase as compared with those in the previous year.

15. **Paper Industry.**—The number of paper mills in this Province as well as their total authorised capital remained the same as in the last year. The paper mill located in Bombay did not work during 1939. The production of the other paper mills amounted to 4,064 tons valued at Rs. 14·9 lakhs as against 4,523 tons valued at Rs. 16·5 lakhs in the year 1938.

16. **Glass Industry.**—The Department, as usual carried out the checking of consumption of soda ash by different glass factories in this Province. In all about 375 tons of soda ash were consumed by the glass factories in the Province as against 298 tons consumed during last year. During the year under report one factory did not work. The imports of glass and glass-wares into Bombay were of the value of Rs. 42,03,964 which shows a decrease of about 6 lakhs as compared with the imports in the previous year.

17. **Vegetable Ghee.**—The factories working in this Province for the manufacture of vegetable ghee did well during the year under report. The imports of vegetable ghee are almost negligible. The new factory

situated at Pachora for the manufacture of vegetable ghee is still under erection and it is expected that the factory will commence working by the end of 1940. This factory is also manufacturing soap and refined oil. The production figures of the existing factories are not available.

18. **Soap Industry.**—The industry made a good progress during the year under report. The imports declined and there was considerable increase in the export of soap during the year under report over that in the last year.

19. **Confectionery.**—The number of factories coming under the Factories Act was 54 as against 52 in the last year.

20. **Film Industry.**—This industry has a considerable scope for further development in the Province and other parts of India. The total capital invested in the industry is estimated to be about Rs. 7·37 crores, sixty per cent. of which i.e., about Rs. 4·42 crores is taken to be invested in this Province. There are about twenty producing companies and about 230 exhibition-houses in this Province. The number of films produced during the year and the footage of raw films imported during the year show a slight decrease as compared with the figures for the previous year.

(iii) New Enterprises.

Some of the more important enterprises started during the year are as follows :—

21. **Motor Cycle and Motor Car Tyres and Tube manufacture.**—A leading American firm which was so far importing car and motor cycle tyres and tubes from America started a factory in Bombay, investing capital of about Rs. 75 lakhs for manufacturing car tyres in Bombay. All the equipment and machinery installed are up-to-date. The raw rubber required by the factory is purchased from South India, particularly Cochin. The Company is trying to get the canvass required by it manufactured locally. All the other materials required are at present imported from America and abroad. The Company has already put the locally made tyres on the market.

22. **Cycles manufacture.**—A company has been floated for the purpose of manufacturing cycles in Bombay. The managing agents of the company are a well-known firm commanding good financial resources. All the machinery required was ordered from England, but the company has been unable to obtain the same in the scheduled time due to the outbreak of war.

23. **Industrial Rubber Gloves.**—A firm has started manufacturing industrial rubber gloves, on a small scale. The latex required in the manufacture of gloves is imported by the firm from Travancore, and othe

chemicals required are imported from abroad. The firm also proposes to take up the manufacture of gum-boots.

24. **Emery and Glass Paper.**—A firm has started manufacturing emery, glass and water-proof abrasive papers on a small scale. The firm is reported to be getting a ready market for its products.

25. **Gas Masks.**—A company situated in Bombay started manufacturing gas-masks on the outbreak of war in Europe. Owing to the lack of demand, however, the company has stopped the production of the same for the time being.

26. **Artificial Leather and Woollen Cloth.**—A firm has re-started the plant at Ambernath for the manufacture of artificial leather cloth and woollen cloth.

27. **Starch manufacture.**—A new factory for the manufacture of starch from maize is now under construction at Ahmedabad. This factory also proposes to manufacture glucose, dextrine, chemical starch, gluten, food maize, germ oil, etc. The factory is expected to commence work by the end of the year 1940.

CHAPTER II.

WORK OF THE DEPARTMENT FOR ORGANISED INDUSTRIES.

28. As in the previous years, a variety of industries in the Province sought technical advice, general assistance, and help of the Department in the solution of their practical difficulties encountered in the process of manufacturing and marketing of their goods, etc. Some of the details given below, give an idea of the type of work undertaken by this Department.

(a) Solving of Practical Difficulties in the Processes of Manufacture and Rendering of Technical Advice.

29. A few of the requests received during the year for solution of practical difficulties and technical advice are briefly summarised hereunder :—

(1) One party was given advice and recipe for sizing and glazing thread.

(2) An estimate for the manufacture of buttons from buffalo horn tips, mother of pearls, corozo nuts was furnished to a party.

(3) A party wanted advice for utilization of residue of wood and saw dust which was given.

(4) One party requested for guidance as to the machinery and tools that should be purchased for the manufacture of some automobile spare parts. Details of the necessary equipment were furnished to the party.

(5) On a request for some estimates for small scale industries a party was furnished with necessary information on seven different industries.

(6) An estimate for a small factory for the manufacture of sand paper and emery paper was supplied to a party on its request.

(7) A detailed note on the manufacture of electric sparklers was given to an enquirer.

(8) Parties interested in the manufacture of school boys slates and slate pencils were given detailed information and furnished with notes and plan of rolling machine for the preparation of slate pencils by synthetic processes.

(9) A party interested in the establishment of an Art silk mill at Ambernath was given general information on the industry and advice as to machinery, etc., required.

(10) A party desired information and advice on the possibilities of manufacturing safety razor blades which was given in detail.

(11) Parties contemplating the question of manufacturing plywood were given detailed information on various points as required by them.

(12) A village teacher had manufactured a small hand duplicatory machine. This was examined and tested and improvements necessary were pointed out.

(13) Estimate for a factory for the manufacture of agricultural implements was given to a party.

(14) One leading manufacturer of gold and silver thread and embroidery goods in Bombay faced some difficulties in gilding work and sent samples of silver thread, gilded thread, chemicals used etc. for test for obtaining superior finish. Necessary test of the solution was carried out and the party was furnished with the information it required.

(15) An estimate for a small envelope-making unit was given to a party interested.

(16) One Engineering Works in Surat was manufacturing pulleys of approximately 5″ × 1″ face for Horizontal wire drawing machine of 32 holes. These pulleys are prepared from Rochling Nickle Chrome Steel (Air hardening) Brand RAN 6. These, however, needed proper hardening. Necessary processes of hardening were carried out in the Industrial Engineer's Workshop of this Department.

(17) One firm in Surat was facing difficulties in working with its diamond dies. These were dressed and polished. So far in this

Province diamond dies were not dressed and with the introduction of mechanical equipment to dress the worn-out dies considerable use would be made of the large stocks of worn-out dies in Surat.

(18) A local firm experienced difficulties in its experimental work for fusing chrome iron ore in the absence of proper equipment. It was allowed to conduct its fusing experiments in the electric furnace set up in the Industrial Engineer's Workshop of this Department.

(19) A party has invented a certain dyestuff and approached this Department for help. The experiments made proved the dyestuff to be fairly fast to bleaching by hypochloride. The test reports were supplied to the party for its information.

(20) A firm working in Bombay has been manufacturing subacetate of lead. The firm wanted a certificate and requested this Department to undertake the analysis of this product. Samples of this substance were obtained from the firm and analysed in the laboratory of this Department. The results showed that the substance manufactured by the firm concerned was satisfactory. The matter was brought to the notice of the Directors of Industries of other Provinces and all sugar factories of this Province to give their patronage to this firm. The firm was also furnished with the test results of the same for its information.

(21) The party at Utran manufacturing lime oil approached this Department for help in the manufacture of lime juice, etc. Experiments in this connection are being carried out in the Laboratory of this Department and the results will be made available to the party as soon as experiments are complete. Information regarding cold drawn lemon oil from Sicily was obtained from the Indian Trade Commissioner and supplied to the party for information.

The other party at Anand has been given the still from this Department for the manufacture of lemon oil for a short period. He is also progressing steadily.

(22) With a view to find out whether any improvements could be suggested in the present practice of the distillation of Rosha grass oil, the Research Assistant of this Department was deputed to Dindori and Baglan Ranges in the Nasik District. He visited the places where distillation was carried on and explained to the parties certain suggestions in the manufacture of Rosha grass oil. As the season was almost over, further investigation was not possible. However, a sample of Rosha grass was brought from Dindori Range, and the yield of oil obtained using (i) Experimental still fitted with open and close steam coils and (ii) Direct fire false bottom still was studied. The average yields were 0·57 per cent. and 0·52 per cent. respectively. It is hoped that early preliminary arrangements would be made with the co-operation of the

Forest Department during the next season so that the equipment, etc., for experiments might reach the spot in time to carry on further work.

(23) The question of using bottles in place of tin cans for preserving fruit and fruit juices is being investigated by this Department. A note on the manufacture of Tomato juice was obtained from the Imperial Institute, London, and was supplied to interested parties for their information. A note on fruit canning specially mangoes and pineapples was also prepared and supplied to interested parties.

(24) An investigation was carried out on the subject of Tannin extract manufacture in this Province. Two parties showed interest in the industry. One of them was furnished with all particulars regarding availability of myrobalans, site, etc., and it is understood that the party is trying to influence some financiers for setting up a factory. Another party forwarded a scheme for starting a factory. The scheme was scrutinised and this Department's remarks on the scheme were duly communicated to it.

(b) General Assistance to Industries.

30. A number of new concerns came into existence during the year. Many of them were visited by a member of the staff of this Department. The concerns were given when required such advice as was necessary. They were also recommended to the several purchasing authorities in the country. In some cases the question of customs duty, supply of cheap raw materials and other facilities was taken up on behalf of the factories with the authorities concerned. Some examples of this kind of work are reviewed below :—

(1) One firm started the manufacture of all sorts of glass emery and sand papers, water proof abrasive papers, emery sticks and emery plates at Andheri (B. B. & C. I. Railway). The name of the factory was brought to the notice of Government departments in this Province interested in such products and of the Directors of Industries of other provinces.

(2) An electric lamps manufacturing company in Bombay was assisted in getting tested free of charge its lamps at Alipore Test House (Government of India). The company's products were recommended to the Government Printing and Stationery Department of this Province.

(3) A factory manufacturing twist drills, reamers and milling cutters was recommended to the different provincial Directors of Industries.

(4) A local tobacco company sought assistance of this Department for putting its products on the list of supplies to the military. The matter was taken up by this Department with the Canteen Contractors Syndicate Ltd.

(5) A glass works was assisted in obtaining permit to visit and study the working of a recuperative glass furnace established at the Star Glass Works, Ferozabad. Another glass works was supplied with a note on " Instructions and data to guide the erection and operation of the Industrial Research Bureau Recuperative Glass Pot Furnace ".

(6) A party at Gadag solicited help for securing rootrunners of Japanese variety. The Indian Trade Commissioner at Japan was requested to make enquiries in the matter. It was found that it was not possible to get the same from that country. Rootrunners were obtained from the Botanical Gardens at Hakgala, Ceylon, through the Horticulturist to Government, Poona, and 200 rootrunners were ordered out for the party. The rootrunners reached Gadag in good condition. The results of the plantation and extraction of oil will be awaited.

(c) Scope for New Industries.

31. There appears scope among others for the following new industries in the Province. In this connection a reference is also invited to the previous years' reports :—

Strawboard Manufacture.—This Department has been investigating the possibility of manufacturing strawboards from coarse grasses found in this Province. The President of Forest Research Institute and College, Dehra Dun, having agreed to take up the examination of the coarse grasses for their suitability for strawboard manufacture, the Chief Conservator of Forests, Poona, was requested to supply 20 lbs. of samples of each set of grass found in the Tansa area. The four samples of grass were tested by the Officer-in-charge, Paper and Pulp Section, Dehra Dun, and the report of this officer showed that satisfactory qualities of strawboard can be prepared from these qualities of grasses. Samples of strawboards received from Dehra Dun in this office have been found to be of good quality. The necessary data regarding site, cost of lime, coal, electric power and wages for skilled and unskilled labour for framing an estimate for the manufacture of strawboard from grasses are being collected and will be forwarded to Dehra Dun for the purpose of an estimate. The estimate would be made available to interested parties as soon as it is ready.

Artificial Silk Industry.—We at present import into India all our requirements of artificial silk yarn, there being no Indian production. We have in the country a big demand and the principal raw materials. There is, therefore, a good *prima facie* case for this new industry.

Electrolytic Caustic Soda and Chlorine.—The chief raw material required is salt. Cheap electric power is another necessity for this industry. Sea-salt is available in abundance round about Bombay and with little purification it can be used for this process quite successfully as is done in Japan and China.

As regards electric power supply it would have to be available at rates cheaper than those current in Bombay, if caustic soda and chlorine are to be manufactured on a large scale and intended for supply over a wide area. If, however, these products are to be used locally within a radius of ten miles, then they could be sold in the form of solution, thus saving the cost of concentration, packing and transport. Under these circumstances, even with the power rates at present prevailing in Bombay the manufacture of these products seems to have good prospects.

The estimated consumption in Bombay city, of caustic soda and chlorine is such as to justify the establishment of an economic unit of manufacture of these chemicals. Plants are being operated in western countries even to-day on these lines and there is no reason why a plant of this type should not succeed in Bombay.

Hydrogen Peroxide.—In recent years peroxide bleach has become popular in the cotton and silk industries and consequently hydrogen peroxide and persalts are being used in the textile industry in Bombay in increasing quantities. The most important requisites for the manufacture of this chemical are water and electric power. Both of these are available in plenty in Bombay. Bombay has also a ready market for the commodity making its disposal locally easy. The chemical is generally packed in glass carboys for export and consequently the transport costs are rather high.

Phosphorus.—It is manufactured by heating bone ash with coke and sand in an electric furnace. The main requirements of this industry, therefore, are bone ash and electric energy. Bones are available in large quantities round about Bombay and electrical energy can also be had at reasonable rates. There is a ready market for phosphorus in the city.

Hydrosulphite.—It is used by textile mills and sugar factories. The raw materials required are zinc, sulphur and sodium carbonate. Of these, zinc is imported at present from Burma and sulphur is imported from Italy or Japan. Soda ash though imported from foreign countries at present is likely to be manufactured in India soon. The manufacture

of this chemical gives large quantities of zinc carbonate as a by-product which should form a suitable raw material for the manufacture of zinc chloride, another important chemical required for the textile industry.

Zinc Chloride.—This is one of the important chemicals required in the textile industry. If the production of this chemical is carried on in co-operation with the manufacture of hydrosulphite which gives large amounts of zinc carbonate as a by-product suitable for t is purpose, the manufacture of this chemical should prove to be a profitable line.

Dichromates.—The raw materials required for these are chrome ore, lime and soda ash. Chrome ore is available in the Province of Bombay and it can be brought to Bombay by sea. Good lime is found on the Kathiawar coast and it is available in the Bombay city at a reasonable rate. Soda ash will have to be imported for the present but it is hoped that it will be soon produced in India. There is a good and expanding market for dichromates in the textile and leather industries. Pilot plant experiments are being carried out in the Chemical laboratory of the Department of Industries and although these experiments are not yet complete, the work done so far definitely shows that there is a good scope for this industry in and around Bombay both now and in peace time.

Sodium Sulphide.—This chemical is required in the textile industry for use with sulphur colours, in leather tanning industry and for the manufacture of viscose silk. The raw material required is sodium sulphate. The latter is found as a white deposit on the surface of nearly 2,000 acres of salt lands in the area served by Nira left bank canal in the Poona District and is available practically for the cost of collection. A rough estimate indicates that at least 1,000 tons of this salt should be available per year from this locality alone. Detailed investigations on this problem are being carried out by the Department of Industries in co-operation with the Irrigation Department. The other requirements are coal dust and fuel. There should be no difficulty in establishing this industry in Bombay. The imports of this salt are sufficiently large to support a good sized factory. It should not be, therefore, difficult to establish the manufacture of this chemical in Bombay.

Bleaching Earths.—Large quantities of these earths are being used in the vegetable oil refining and hydrogenation plants, the estimated consumption in Bombay city alone being more than 1½ tons per day. At present the earths in question are being imported from outside. The experiments carried out in the Chemical Laboratory of the Department of Industries have shown that equally active clays can be manufactured

from locally availab'e raw materials. A pilot plant for carrying the experiments a stage further is being put up.

Glue and Gelatine.—These are used in large quantities in wood working industry, in textile mills, for making distempers and matches, etc. While some glue is manufactured in India especially in North India in winter season, it is not of a very high quality. Very little glue is manufactured in the Bombay Province. Glue is generally made from bones or from hide scrap, sinews, etc. which are availab'e in large quantities and are normally exported. The only other requirements of this industry are steam and power. As the market for this product is very extensive and the raw materials are available at very low rates this industry has very good prospects in this Province, even in peace time.

Electric Wires and Cables.—Due to the development of electrification in this Province and in other parts of India, large quantities of wires and cables are required. The electrolytic copper wire required for this industry can be imported duty-free. The other raw materials required such as rubber, etc. are produced in India. The present imports of these materials in India are very substantial and nearly a third of the imports is accounted for by the Bombay Port.

Electric Fans, Transformers, Motors and Control Gear.—Statistics available show that there is a steady increase from year to year in the number of power stations in this Province and the country as a whole. With the availability of electrical power, the demand for electrical appliances such as electric fans, lighting fittings, electric bells, kettles, etc., and motors and switchgear is definitely on the increase.

Manufacture of electric fans and other appliances requires special steel sheets, insulating material, copper wire and good quality pig iron. The latter two are produced in India. In this industry technical skill of the workers, efficient management and scientific and proper methods of manufacture play an important part in the total cost of production. With the availability of properly trained labour, superior staff and other facilities, Bombay is a good centre for the manufacture of electrical fans and other electrical appliances and machinery and switchgear.

Manufacture of Electrical Lamps and Accessories.—The use of electricity for lighting purposes is increasing at a very rapid rate throughout the country and so also the demand for electric glow lamps. At present India imports large quantities of electrical lamps both gas-filled and vacuum types, Bombay imports being over one-third of the total. Over and above the ordinary electric lamps, electric bulbs for automobiles, flash lights, etc. worth several lakhs are imported into India. Out of these, nearly 25 p r cent. pass through the Port of Bombay. The most important raw materials for the manufacture of electric lamps are glass bulbs, tubes,

metallic filaments and gases, all of which must at present be imported. Some of the leading countries which manufacture electric lamps on a large scale use imported materials for their manufacture. The question of raw materials should not, therefore, present an insurmountable difficulty.

There have been established recently two factories in the city, one for the production of electric lamps and the other for electric lighting accessories. Their daily production is, however, small. There is considerable scope for the development of this industry in the city.

Pottery and Electrical Insulators.—Investigations carried out by the Department of Industries show that clays suitable for the manufacture of glazed household porcelain and electrical insulators are available in this Province. The other raw materials required for this industry are coal, felspar, quartz and small quantities of chemicals. Felspar and quartz are also found in the Province.

Bombay is a large consuming and distributing centre for this class of goods. The city should form an ideal location for this industry.

Industrial Machinery and Spare Parts.—There is a good field for the production of light machinery, small engines, pumps and machinery spare parts in Bombay. This is particularly so in connection with the manufacture of light machinery and spare parts required by the textile industry. Bombay Province has no less than 219 textile mills. More than 66 per cent. of the total number of spindles and 74 per cent. of total number of power-driven looms in India are in operation in the Bombay Province. Out of these an appreciable number operates in the city of Bombay and suburban area. Large quantities of scrap iron and other metals are exported from the Port of Bombay every year. These scrap metals can be utilised for manufacturing light machinery and spare parts. Other raw materials and skilled labour are also readily available. The imports of light machinery, small engines, pumps and spare parts for cotton textile machinery are quite large. There is no reason why a good part of the demand should not be met by local production.

Builders' and Domestic Hardware.—These are imported at present in fairly large quantities. The important raw materials for this industry are ferrous and non-ferrous metals like iron, copper and brass. The greater part of the raw materials is produced in India. More important items in the cost of manufacture of these materials are labour and finishing charges; consequently the fact that metals have to be brought to Bombay from the other parts of India ought not to be a hindrance in the development of this industry in the city.

Manufacture of Belting for Machinery.—There is a great demand for belting of all kinds for running machinery in this country which is at present met by imports. Belting is manufactured from cotton, leather, and other materials. The raw materials like cotton and leather can be had cheaply in Bombay. The important factors in the production of belting are cheap power and raw materials. Both of these are avai able in Bombay. The city can, therefore, become a very important centre for the production of belting for machinery.

Automobiles.—Government had been approached during the year for support to a company proposing to set up an automobile factory in the neighbourhood of Bombay.

(d) Commercial and Industrial Intelligence.

32. In the absence of a separate organisation in this Department for the systematic collection and dissemination of Commercial and Industrial Intelligence and Statistics, the existing staff of this Department carried on the work as best as possible. Enquiries received during the year were as usual regarding trade openings, statistics of import and export, names of dealers and sources of raw materials, names of Indian manufacturers, standing of firms, etc. etc. As in the previous year local enquiries of a confidential nature were received from the Stores Purchase Department, U. P., Director General of Commercial Intelligence and Statistics, Calcutta, Indian Stores Department, Bombay and various other Government Departments. The officers of this Department had to visit various firms and factories for verification of the statements made by them in their applications for registration by the Stores Purchase authorities of various Governments.

Due to the outbreak of war, besides the usual type of enquiries a number of references regarding the standing of firms, their capacity to supply the Government orders, etc. was received from the Army Department, Director of Contracts, Railway Board, etc. and dealt with. Further, a great number of enquiries was also received from the general public regarding priority certificates for exports, import restriction, shortage of raw materials, etc.

The total number of enquiries received and answered by this Department during the year was 1,659 against 1,561 in 1938–39, 1136 in 1937–38, and 718 in 1936–37. It will be observed from this that the number of enquiries has more than doubled itself during the course of the last four years. It may also be noted here that there is a great scope for the development of commerce and industries of the Province, by organised dissemination of Commercial Intelligence and Statistics with proper organisation and adequate staff.

(e) State Aid to Industries.

33. **Loans.**—The question of the revision of the State-Aid to Small Industries Rules, 1935, referred to under last year's report, with a view to widening the scope of the Rules, was considered by Government. Government decided that the revised State-Aid to Industries Rules should not be sanctioned at present but the principle underlying the same should be applied, when necessary to particular applications for State-Aid.

34. A number of applications for State-Aid was received during the year and dealt with. Loans of the total value of Rs. 54,380 were sanctioned and disbursed during the year. These loans were sanctioned on the basis of State-Aid to Industries rules as proposed to be liberalised in regard to (*a*) grant of loans beyond the limit of Rs. 10,000 for any one application, (*b*) rate of interest being reduced to 5½ per cent. and (*c*) security being in the form of mortgage of the industrial assets only, etc. The applications were all examined on their individual merits, and when it was considered that the industry had a fair chance of success, the loan was recommended to Government or sanctioned by this Department. The details of loans sanctioned and disbursed during the year are given below :—

(i) A loan of Rs. 48,000 was sanctioned and disbursed to a firm manufacturing chemical and pharmaceutical products. The loan was utilised by the firm in paying off old dues, purchasing some new machinery and as working capital. In accordance with one of the conditions on which the loan has been sanctioned, the Director of Industries has been nominated on the Board of Directors of the Company.

(ii) A loan of Rs. 4,000 was sanctioned and disbursed to a firm manufacturing scales and weights, laboratory equipments and scientific instruments, etc. The loan has been utilised by the firm as working capital.

(iii) A loan of Rs. 480 was sanctioned to a small manufacturer of cradles, etc. The loan has been utilised in purchasing raw materials.

(iv) A loan of Rs. 1,900 was sanctioned and disbursed to a firm manufacturing cameras. The loan has been utilised by the firm as working capital.

35. Besides the loans mentioned above, further loans of the total value of Rs. 1,03,300 were sanctioned during the year but could not be disbursed, as preliminary arrangements regarding the execution of the mortgage deed, etc., could not be completed before the end of the year. The details of these loans sanctioned are given below :—

(i) A loan of Rs. 20,000 was sanctioned to a firm which has been manufacturing in Bombay city various types of electric clocks for a long time. The firm proposed to instal machinery for manufacturing

spring clocks and time pieces. Of the loan amount sanctioned the sum of Rs. 5,000 has since been paid to the firm, and the balance will be paid after the necessary machinery, etc., has been received.

(ii) A loan of Rs. 3,000 was sanctioned to a firm manufacturing various types of toilet and other brushes. The sum of Rs. 2,250 has since been paid to the firm and the balance will be paid after the firm purchases machinery of the value of Rs. 1,500.

(iii) A firm manufacturing cigarettes requested for a loan of Rs. 20,000. The application was considered, and a loan of Rs. 9,500 was sanctioned. The decision of Government was under consideration of the company at the end of the year under report.

(iv) A society which manages a glass factory in this Province approached Government for a loan of Rs. 10,000 for purchasing a new blowing machine required in the manufacture of crown finished bottles and other small glass articles. The loan was sanctioned but could not be disbursed during the year.

(v) A firm manufacturing a number of glazed sanitary refractories, fire bricks, etc., chiefly from clays approached Government for a loan of Rs. 75,000. A loan of Rs. 60,000 was sanctioned to the firm.

(vi) A firm managing an iron works approached Government for a loan for purchasing machinery, for manufacturing cutlery. A loan of Rs. 800 was sanctioned to the firm during the year under report. The loan has since been disbursed.

36. Besides the loans and grants sanctioned for the development of industries, the Department under orders of Government had to sanction a few small loans to the persons affected by Prohibition. The loans sanctioned under this head during the year under report were of the total value of Rs. 700.

37. The parties to whom loans have been granted under State-Aid to Industries Rules during the previous years, continued to do well and paid their instalments regularly.

38. A grant of Rs. 3,000 was sanctioned and disbursed during the year to a party who has invented a vegetable oil lamp for carrying on further researches to make it adaptable to the village conditions. The experiments being conducted from this grant are being supervised and reported upon by a committee appointed by Government consisting of Deputy Director of Rural Development and two non-officials. The experiments, if successful, will not only make the lamp a cheap substitute for the Kerosine oil lamp, but will also provide an economic use for the non-edible oils available in the Province.

(f) Grants and Other Concessions.

39. Government were pleased to grant certain concessions and facilities for the establishment of a paper and bamboo pulp factory in Kanara. A Company for the purpose was duly registered and floated. On account of the war, the company was, however, not able to arrange for the import of the necessary machinery. It decided accordingly to start work with the manufacture of hand-made paper as an emergency programme. The Company was at the close of the year negotiating for the purchase of a closed down paper mill in the Madras Province. The machinery will be tried out for 3 or 4 months and if found satisfactory, it will be purchased and utilised for the proposed factory in this Province.

40. A party from Dharwar submitted a scheme to Government for starting a factory in the Kanara District of the Province for manufacturing plywood. The scheme submitted to Government was examined by this Department and the Forest Department. Originally Government were requested to give financial aid to the Company by way of subscribing a part of the capital. Later on, however, the sponsors of the Company withdrew their request for financial aid and applied for certain forest concessions, etc. This application was under the consideration of Government at the end of the year under report.

CHAPTER III.

EXPERIMENTAL INDUSTRIAL WORK AND PRACTICAL DEMONSTRATIONS FOR THE BENEFIT OF SMALL SCALE AND COTTAGE INDUSTRIES.

(a) Industrial Engineer's Workshop, Bombay.

41. The workshop started its regular work during March 1939 and took up the experimental work in connection with the different cottage and small-scale industries scheme, e.g.—

(1) Imitation Gold Thread.

(2) Sann Hemp Fibre.

(3) Village Oil Industry.

(4) Glass Bangle.

(1) **Imitation Gold Thread.**—A process for electroplating copper wire with brass by a continuous method has been evolved. The following altogether new features have been successfully introduced to obtain a thick, yellow, bright and durable brass-deposit :—

(i) A long wooden tank with self-heating arrangement and a suitable glass-cover, as a container for the brass-plating solution.

(ii) Adjustable and symmetrical electrical fittings and connections.

(iii) New types of anodes placed in porous pots. Considerable economy has been achieved by evolving a process for preparing brass-solutions directly from waste copper wire. A formula for brass-solution has been fixed by analytical work.

Two qualities of Imitation Gold-thread—800 yds. per oz. and 2,000 yds. per oz.—have been made and found suitable for use in laces and saris respectively. They have been utilized in saris and embroidery and are now being tested out as to ageing. Semi-commercial work for manufacture of imitation gold thread for testing its market possibilities is now under consideration.

(2) **Sann Hemp and its manufacture.**—The Fibre Expert completed the survey of the important hemp growing districts of the Province and prepared a report on the possibilities of the development of fibre resources of Bombay Province in the form of a bulletin for publication which is now in the press.

The Raspador machine for extraction of Agave fibres was designed and constructed in collaboration with the Industrial Engineer of this Department. Tests were taken and demonstrations were given to several private parties interested in modern implements for extracting fibres.

A scheme for organising a demonstration party for soft and hard hemp fibre extraction was prepared and put up to Government for consideration and sanction.

A modified scheme for grant-in-aid to the Sisal Fibre Institute, Ahmednagar of Rev. Loy L. Long was submitted to Government for consideration and Government were pleased to sanction the scheme with a condition to train 15 Government apprentices from Ahmednagar and other districts. The curriculum and equipment of the Institute were drawn up in consultation with Rev. Long.

Shrigonda Fibre plantation was visited and report made. The plantation was proposed to be reserved for this Department or experimental work on cultivation and supply of fibre for the Sisal Fibre Institute of Ahmednagar and for the field test of the Raspador machine.

Report on tests carried out on Deogad and Rajapur Sann Hemp in Scotland in spinning and making twine was received and the results proved satisfactory. The hemp could be spun into a fine yarn. Further 500 lbs. of Deogad and Rajapur hemp were sent to Messrs. H. G. Products, a firm in England, for softening and bleaching after which the spinning and twisting tests and the manufacture into canvas cloth and other similar fabrics can be carried out. Their test report is awaited.

Experiments on the weaving of Sann Hemp yarn into canvas, tarpaulin and ground-sheets on the handlooms were conducted in the Industrial Engineer's Workshop. The results proved satisfactory as cloth and burlaps could be manufactured.

Experiments for manufacture of twines and two-ply ropes on cottage industry scale, from Salsi and Godhra fibres were conducted in the Industrial Engineer's workshop and marketable twines and binding ropes plain and coloured could be manufactured.

Several inquiries in connection with Sann Hemp, Agave fibres and Raspador were received and technical advice was given.

(3) **Village Oil Industry.**—The appointments of Assistant Engineer and of the Chemist were made in April and September 1939, respectively.

(a) Investigations.—A preliminary survey of the different types of the existing bullock ghanies and oil seed cleaning and decorticating appliances was made in the districts of Satara, Dharwar and Bijapur which are among the chief oil producing centres. The necessary data and information have been collected regarding the construction, production, mode of working, defects and difficulties experienced by the oil-man.

(b) Mechanical Experiments.—Several small scale models of local types of ghanies were made in the Industrial Engineer's Workshop and as a result of experiments and tests carried out on them, an improved type of bullock ghany has been constructed.

Pressing of oil seeds has been tried out and the result obtained as regards output—oil percentage to seed and oil in seed cakes has been very satisfactory and encouraging specially the Low Draw Bar pull and efforts on behalf of the bullock.

Experimental work on another large type of improved model of a Deccan Ghani is being continued in order to arrive at definite conclusive results with other types prior to field demonstration of the type finally selected. Examination of locally-made mechanical hand-made seed decorticator has also been made and early steps would be taken to experiment upon a cheap type of mechanical decorticator for individual ghany owners.

(c) Village Oil Ghany (Chemical Investigation).—An Oil Chemist has been appointed in connection with the scheme from 13th September 1939. During the year under report, he tested some of the different oil cakes. The work will be continued in the next year.

(4) Glass Bangle Manufacture.—As a result of experiments carried out by the Department on the designing of an improved glass furnace and the manufacture of glass from local raw materials, Government sanctioned a scheme to assist erection of six improved glass furnaces during the year 1939–40. Government agreed to pay half the cost of the furnace and erecting expenses as a subsidy to the glass workers while the other half was given as a loan free of any interest recoverable by monthly instalments of Rs. 5 each. The Department of Industries supervises construction and erection of the improved type of furnace and gives the requisite technical assistance in putting the furnace in working order.

The Assistant Glass Chemist of the Department also toured the districts of the Bombay Province where the glass bangle industry exists and with the help of the village officers explained to the cottage workers the assistance offered by Government both financially and technically. They were also informed of the benefits derived in introducing an improved glass furnace and were also shown samples of glass made in the experimental furnace at Bombay in the Industrial Engineer's workshop. As a result of this, three furnaces were built during the year and sold to local glass workers—two furnaces at Nasirabad and one at Bijapur. This together with the three furnaces supplied before, makes the total of six improved glass furnaces introduced in the Province.

Experiments in the Industrial Engineer's Workshop were also carried out on certain coloured glasses which had not so far been satisfactorily made. Utilizing local lime, sand and quartz, some experiments were also carried out on the enamelling of glass bangles eliminating brush work. These experiments are to be continued.

Samples of raw materials—sand and lime—were also analysed in the laboratory of the Industrial Engineer's Workshop, both for local glass workers and for the Ceylon Trade Commissioner. Different qualities and colour of glasses were also made from the Ceylon Sand.

(5) Miscellaneous Work.—The workshop did not restrict its activities to the experiments narrated above only, but attended to other work as well, e.g., possibilities of designing improved tools and implements and small hand and power driven machines, etc., for assisting cottage and small scale industries as described below :—

(1) A small rope making machine for fibre ropes, mechanically driven by gears was designed and made.

(2) One medium size cordage making machine for manufacturing ropes up to 2" diameter was designed and sent to the Coir Supervisor at Malwan to demonstrate it to the students and coir workers.

The machine seems to have been a success as an indent for one more machine was received.

(3) The demonstration of boot lace making machines purchased from a local firm held at Yeola and Poona Exhibition was popular. The cost of these machines was high and prohibitive for the villagers. Investigations were taken into hand for constructing a simpler and cheaper machine for this work. One set of boot lace making and clipping machines was manufactured and supplied to Mr. H. S. Kaujalgi, Secretary, All India Spinners Association, Karnatak Branch, Hubli, and a local party was assisted in setting up a small shoe lace making factory.

(4) Test of a Charka named Sudarsana Charkha was carried out in the workshop as desired by Government under the guidance of the Senior Weaving Assistant.

(5) The question of the possibilities of manufacturing dust-guns referred to this Department by Government was gone into.

(6) High precision all metal wood turning lathes for wood carvers of this Province were manufactured in the workshop.

(7) All equipment for the boot lace and fibre demonstration work including spinning wheels, looms—carpet looms—newar looms, banding machine, braiding machines, twine twisting and balling small and medium cordage machines, was designed and made in the workshop.

(8) Raspador for fibre extraction and trolly equipment was designed and partly constructed in the workshop.

(9) Tests for vitrifying of locally made emery and grinding wheels were carried out.

(10) Tests were carried out on different ores in the gas furnaces of the workshop.

(b) INDUSTRIAL CHEMIST'S LABORATORY, BOMBAY.

42. The following experimental work was carried out in the laboratory :—

(1) **Dehydration of Castor Oil.**—Castor oil is used in medicine and is also widely used as high-grade lubricating oil. It is also used in the preparation of special soaps and textile auxiliaries, etc. In recent years it is being increasingly used in the preparation of a new drying oil known by different names such as Isoline, Kastolene, Dienol, etc. These are prepared by dehydrating castor oil by special patented methods. The drying oil so prepared from castor oil has properties quite different from

those of linseed oil and resembles to some extent Tung oil in its properties. Experiments carried out in the laboratory of the Industrial Chemist of this Department in the dehydration of castor oil met with encouraging results. It was found that the dehydrated oil gives on drying a film of great flexibility. Further experiments are being made with a view to simplifying the process. It is also proposed to undertake similar research and experiments with other vegetable oils, especially non-edible oils in which the country abounds.

(2) **Hydrogen Peroxide.**—Hydrogen peroxide, besides being used for medicinal purposes is being used now on a large scale for bleaching textiles. This is manufactured in western countries by the electrolytic method, i.e., by making persulphate first and then distilling the persulphate with sulphuric acid to obtain hydrogen peroxide. This method is being tried in the laboratory of this Department. Solutions of very high concentration more than 120 volumes and good yields of the product to make it commercially profitable have been already obtained. Further work is in progress.

(3) **Hydrosulphite.**—Experiments on the manufacture of Hydrosulphite were carried out and are still in progress. Starting with a suspension of zinc dust in water and pa sing sulphur dioxide sodium hydrosulphide liquor was obtained by passing carbon dioxide in the suspension of the zinc salt. The percentage yield thus obtained was reached to 40–45·5 per cent. Exposure o air and light decomposes the product and tends to lower the final yield. Further work with a view to increase the yield and the crystallisation of sodiumhydro-sulphite from the liquor remains to be done.

(4) **Rubber Balloons from Latex.**—Latex is available in large quantities and is being used as such in increasing quantities for the manufacture of rubber goods in Europe and western countries. Experiments were carried out in the laboratory with a view to make this industry a cottage industry and very encouraging results were obtained. An estimate for the manu acture of rubber toy balloons was prepared in this Department and copies of same were supplied to parties interested in the industry.

(5) **Decolourising Clay.**—In the preparation of refined vegetable oil and vegetable ghee foreign deco'ourising clays specially "Tonsil" are being used in a large quantity in India. Experiments carried out in the laboratory of this Department showed that a clay from Jodhpur on activation gave a product practically as active as the imported clay. Large scale experiments are being conducted on the same.

(6) **Citric Acid.**—From the juice discharged from the stil', citric acid can be manufactured. The intermediate product for making citric acid

is calcium citrate. The sludge discharged from the still is either filter-pressed or decanted so that a clear liquid is obtained. This is boiled and calcium hydroxide is slowly added to it till it is neutral. Citric acid is precipitated as calcium citrate. The precipitate of calcium citrate is washed, filtered and dried. Subsequently citric acid is liberated from calcium citrate by means of sulphuric acid. The liberated citric acid is filtered off in the form of dilute solution from calcium sulphate. The dilute solution is decolourised, concentrated and citric acid is crystallised from it.

Experiments were carried out in this connection and a few pounds of citric acid have been prepared. One of the difficulties in the process is the quick clarification of the sludge when it comes out of the still. Settling and decantation take a very long time and at the same time give an inferior product. Easier and quicker methods are being investigated.

(7) **Chlorophyl.**—There is a good demand for chlorophyl in Bombay market for soap making. It is extracted from nettle. The Chief Conservator of Forests was requested by this Department to supply 20 lbs. of dried green plant for experimental purposes. The results of the experiments showed that on extraction with alcohol, nearly 3 per cent. chlorophyl on the weight of nettles exists in moist condition.

(8) **Tali Palm Powder.**—Experiments were carried out on a small scale on the Tali Palm Powder and it was found that the powder contained about 70 per cent. starch. A large quantity of the powder was obtained from the Divisional Forest Officer, Western Division, Kanara, and further experiments are in progress.

(9) **Recovery of potash salts from Bitterns of Kharaghoda.**—One of the research scholars of this Department is working on this problem in the Royal Institute of Science, Bombay. With a view to have a clear idea of the problem, the Industrial Chemist and Dr. Mata Prasad of the Royal Institute of Science, inspected a few salt pans and studied the methods of collecting bitterns.

The samples collected are being analysed in the Institute and further work is being carried out under the guidance of Dr. Mata Prasad.

(10) **Dichromates.**—Experiments for the manufacture of Dichromates are being carried on in the laboratory. An oil fired reverberatory furnace fitted with a recuperator has been set up in the laboratory. The furnace was tried many times and the conversion of Chromite to Chromate was more than 70 per cent. A demonstration of the working of the furnace was held on five occasions in the laboratory when some parties interested attended and learnt the process well. It is learnt that one party in Bombay has put up a furnace in Bombay for the manufacture of Dichromates.

(11) **Recovery of Salt from Baramati.**—Samples of salts from Baramati salt area were obtained from the Research Officer, Baramati, and tested in the laboratory and it was found that a soluble matter extracted from these samples was suitable for use in Paper Mills and for manufacture of sodium sulphide. The Industrial Chemist also visited the area and it was arranged with the Executive Engineer, Research Division, Poona, to supply the salt collected from this area for further experimental work. Further work is in progress.

(12) **Mango Pulp.**—Work carried out in the Industrial Chemist's Laboratory on preservation of mangoes in the dried condition showed that there is a good possibility of preserving mangoes by this method. By drying the mangoes in vacuum, one can get very crisp powder having excellent colour and flavour and good keeping qualities. This powder can be easily dispersed in water to make regenerated mango juice. It can be easily preserved in air-tight cans or bottles. As the powder is very hygroscopic, it should not be exposed to air for a long time. This product should prove very popular with confectioners and ice-cream manufacturers. A note on the subject was prepared and supplied to interested parties and will be made available to others interested in the industry.

(13) **Cinnamon Leaf Oil.**—Experiments were carried on on this problem and oil was distilled. The oil has all the properties of cinnamon leaf oil as reported in literature. If sufficient quantity of raw material is available, a small scale industry can be established. Further experiments will be carried out and the oil extracted will be sent to foreign firms for opinion with a view to test the marketability of the product.

CHAPTER IV.

VILLAGE INDUSTRIES EXPERIMENTAL WORKSHOP, POONA.

43. A scheme for starting an experimental workshop in Poona for carrying out experimental work in connection with improved appliances and processes for existing village industries and any possible new ones was submitted to Government during the year, and was sanctioned at the end of the year under report. The scope of the workshop is proposed to be restricted to appliances operated by hand or animal power used in village industries which can be adopted by the individual or family.

The workshop building has been put up in the grounds of the Agricultural College, Poona, and is adjacent to the workshop of the Agricultural Engineer to Government. The site was chosen in order that the help and co-operation of the Agricultural Engineer may be available.

Similarly, help of the Agricultural Chemist, whose laboratory is located nearby, would be available for analytical work. Further, the site has the advantage of an atmosphere and tradition suitable for village work, as many villagers attend the Agricultural Engineer's Workshop for training in pumping and other agricultural operations.

The workshop will construct and test out hand or animal power appliances and after successful results have been obtained, villagers will be instructed in the use of these. Arrangements will be made to bring to Poona men from different villages for training in the use of these appliances in the workshop premises. As these villagers will require a place for lodging, during the course of their training at the workshop, dormitary barracks of simple design for this purpose have been provided and are under construction.

The staff sanctioned for the workshop consists of a superintendent, typist clerk, master mechanic, turner, carpenter, smith, two skilled labourers and a peon.

It is expected that the workshop would be working by July 1940.

CHAPTER V.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES.

HAND WEAVING INDUSTRY.

44. The department continued to assist the handloom weaving industry, the premier cottage industry of the Province, by means of peripatetic cotton and wool weaving schools and demonstrations and the Central Hand Weaving Institution at Poona. The objects of these institutions are to demonstrate and train workers engaged in hand weaving and allied industries in the use of improved appliances and fitments and methods. Dyers and calico printers were also assisted in adopting improved appliances and methods in dyeing and printing through dyeing demonstrations.

During the year under review were maintained five peripatetic schools for *bona fide* cotton weavers, two weaving schools for agriculturists, one wool weaving school for dhangars and wool weavers, seven cotton weaving demonstrations, three wool weaving demonstrations, one cottage sizing set demonstration and three dyeing demonstrations. A brief account of their work is given below.

45. **Weaving Schools for *bona fide* Weavers.**—These schools are organised in important weaving centres. They admit ten weavers at a time to undergo a fixed course of one year's training. Scholarships of Rs. 3

per mensem are granted to each student for the first three months of the course. Two prizes of Rs. 2 each per mensem are awarded—one for most regular attendance and one for excellent work during the month. The students are also permitted to earn profits on the articles produced by them while under training after deduction of the cost price of Government raw materials used by them from the sale proceeds. All the five schools worked satisfactorily at the different centres where they were located. They were able to introduce 85 improved looms as detailed below :—

Division.	District.	Place.	No. of flyshuttle looms introduced.
Southern Division	Bijapur ..	Kamatgi ..	....
Southern Division	Dharwar ..	Ranebennur ..	....
Central Division	Ahmednagar ..	Sangamner ..	7
Central Division	East Khandesh ..	Erandol ..	16
Central Division	Nasik ..	Yeola ..	42
Northern Division	Ahmedabad ..	Jalalpur Vajifa ..	20

In addition, 22 dobbies were also introduced by these schools.

46. **Weaving Schools for Agriculturists.**—These schools train agriculturists in hand weaving as a subsidiary occupation to enable them to supplement their income in spare time. The course of training extends to six months and scholarships, prizes and distribution of profits on out-turn are provided on the same lines as in the case of weaving schools for *bona fide* weavers. Two such schools were conducted during the year.

One of these schools was working at Honawar in the Kanara District last year with a batch of ten agriculturists admitted in February 1939. This batch completed its training in July 1939 but at the request of local leaders an extension of two months was granted for further training to the students. A fresh batch of ten agriculturists, therefore, admitted in October 1939, completed its training in March 1940. Of the first batch trained during the year, six set up their own looms in their cottages and the rest are expected to do so in course of time.

The second weaving school for agriculturists was working last year at Anjlav, District Surat, with a batch of ten agriculturists admitted in January 1939. It was decided to transfer the school to some other centre

on completion of training of the batch in June 1939, but due to pressure of local leaders the school had to be continued at the same centre till December 1939 with a fresh batch of six students. All the sixteen agriculturists, on completion of training, set up flyshuttle looms in their cottages. The school was then transferred to Satpati, District Thana, where it started its regular work from February 1940, with a batch of ten agriculturists.

47. **Wool Weaving School.**—This school is organised for training dhangars and wool weavers in the adoption of improved methods and appliances in carding, spinning, weaving, dyeing of wool and the milling and the finishing of woollen fabrics. This school was working at Medleri in the Ranebennur Taluka of Dharwar District. Eleven flyshuttle looms, one *galicha* weaving frame and one improved type spinning wheel were introduced there. The school was then transferred from Medleri to Ranebennur, where it commenced its regular work in August 1939. Owing, however, to the apathy of the students towards the system of training imparted, it could not make progress as expected and a fresh batch of ten wool weavers was admitted in November 1939 for a term of six months' training. This batch is expected to set up looms on completion of training in April 1940.

48. **Cotton Weaving Demonstrations.**—These are peripatetic institutions stationed at a weaving centre for 8 to 12 months or more as found necessary to demonstrate to hand weavers the use of improved appliances and modern methods. The seven demonstrations were conducted at different villages as detailed below where they introduced the number of flyshuttle looms mentioned against each :—

Division.	District.	Place.	No. of flyshuttle looms introduced.
Southern Division	Dharwar ..	Hubli ..	14
Southern Division	Dharwar ..	Uppinbetgeri ..	....
Southern Division	Bijapur ..	Guledgud ..	....
Southern Division	Belgaum ..	Belgaum ..	11
Central Division	Shoalpur ..	Karkamb ..	3
Central Division	Satara ..	Nerli ..	....
Central Division	Satara ..	Jawalawadi ..	1
Northern Division	Kaira ..	Borsad ..	4
Northern Division	Ahmedabad ..	Trant ..	12
Northern Division	Ahmedabad ..	Dhandhuka.	....

In addition, 33 dobbies and 4 newar looms were introduced by these institutions during the year.

It may be added here that the demonstration organised at Nerli was arranged to train agriculturists in weaving as a spare time occupation. Seven agriculturists received training in galicha weaving and set up galicha frames. On its transfer to Jawalawadi in November 1939, it imparted training to ten agriculturists who were members of the Multi-Purpose Co-operative Society of the place, in weaving of khadi, chaddars, towels, carpets, *galichas* and newar. Two carpet looms were introduced at this centre in addition to the flyshuttle looms mentioned above.

49. **Wool Weaving Demonstrations.**—These are conducted on simpler lines than the wool weaving school mentioned in the foregoing paragraphs to train wool weavers in the adoption of improved appliances in carding, spinning, dyeing and weaving of wool and milling and finishing the village woollen products. A brief account of the three wool weaving demonstrations is given below :—

(*a*) One demonstration was conducted at Budjhal in Petha Belgi, District Bijapur, till October 1939. It was then transferred to Bijapur at the request of the Tarun Kurubar Sangh, Bijapur. The Collector of Bijapur was pleased to provide scholarships of Rs. 6 per mensem for the Kurubars of his district who would agree to undergo a thorough practical training of six months at the demonstration by regular attendance. Fourteen students took advantage of this training besides casual attenders. In addition, the demonstration provided special facilities for training in carding and spinning by improved appliances to female workers. The Collector of Bijapur also offered a scholarship of Rs. 2 per mensem for three months training in this connection. Eight female workers accordingly received training from November 1939 to January 1940 and a further batch of eight joined the demonstration in February 1940. The demonstration introduced four spinning wheels and the students trained in weaving are expected to set up their looms.

(*b*) The second wool weaving demonstration was working at Bori in the Indapur Taluka of Poona District. It was organised at this centre in January 1939. The local wool weavers were found to weave kambals of only 40" width with their crude methods. The usefulness of flyshuttle loom was demonstrated along with improved carders and spinning wheels. Training was also given on a galicha frame to those who showed interest. The demonstration aroused interest amongst weavers who after training can now manufacture kambals of 72" width on flyshuttle looms. The demonstration introduced nine sets of improved carders, two improved spinning wheels, one galicha frame and three flyshuttle looms.

(c) The third wool weaving demonstration was working at Miri in Newasa Taluka of Ahmednagar District. It was mainly utilised for assisting the North Central Divisional Industrial Co-operative Association Limited, Ahmednagar, in organising its new branch of woollen industry under the Government of India Scheme. Seven improved type of flyshuttle looms were installed for the production of attractive marketable woollen goods so as to guide the wool weaving members of the Association to adopt the new patterns and designs in their production. These wool weavers were also provided with work by the Association and the demonstration assisted the weavers to manufacture particular types of clothes required to be indented. The woollen products woven at this centre were of various types and patterns and popular in the Ahmednagar District. Weaving of Kambals, check rugs, blankets, overcoating cloth, shawls, etc. etc., was introduced. The blankets required by the Civil Hospital, Ahmednagar, were manufactured and dyed and finished entirely by hand process and compared favourably with machine made blankets.

50. **Cottage Sizing Set Demonstration.**—This demonstration continued its activities at Kittur in Bailhongal Taluka of Belgaum District during the year under review in demonstrating the proper methods of sizing yarn and *galicha* making. It was well attended.

51. **Dyeing Demonstrations.**—Three dyeing demonstrations were conducted during the year under review in the different centres of Southern Division, Central Division and Northern Division as detailed below :—

(a) The dyeing demonstration which was working at Khasbag, Belgaum, last year, continued its work there during the year under review. The work of silk dyeing was further investigated and the shades current in the market were standardised. The dyeing processes were simplified further to such an extent as to enable a weaver to pick up the same and dye his local requirements with modern colours and chemicals easily. New and fancy shades both on silk and cotton yarn were introduced and both dyers and weavers under training have adopted the same. As a result of the demonstrations given fourteen weavers received training in silk and cotton dyeing, twelve of whom have started to dye their own requirements, four small new dye houses on cottage industry basis are established and four out of six weavers who were trained in yarn and silk printing are doing their work independently in this direction.

Instructions and practical training were imparted in the different branches of printing work also.

Two students trained in calico printing are reported to be doing well—one of them having started printing of bags. A past student

has considerably developed his business this year adding screen printing to his works.

Two students received training in mica printing of whom one has started work on a small scale.

Six students were trained in spray printing. As a result of the demonstrations given in spray printing one local hosiery factory introduced spray printing in its works. The necessary equipment has been purchased and the installation of the same would be completed shortly to the advantage of the factory.

In addition to the local weavers, dyers and others receiving training at the demonstration there were twelve persons who attended the demonstration from outside places like Karwar, Alur, Shirol, Hubli, Gadag, Ranebennur, Pachhapur and Bailhongal.

Two new features worth noting were added to the activities of this demonstration under Mr. D. V. Datar, Dyeing Demonstrator. After continued experiments a novel process in weaving was introduced through the help of this demonstration. It was the printing of cotton, silken and woollen yarns with different colours used by the dyers and weavers. This process has enabled the weavers to produce a variety of attractive and elegant designs which would fetch good demand for the products. This departure by the weavers from their usual mode of work has naturally reduced the production of old type bodice cloth and sarees, for the marketing of which the weavers had to face serious difficulties.

Another important feature was the investigations into the possibilities of manufacturing some dyes. Due to the outbreak of war the supply of dyes and chemicals has been very restricted. Experiments were, therefore, undertaken on the utilisation of indigenous and vegetable dyes. Some of these viz., catecheu, myrabolans, turmeric, kapila powder and annatto seeds are now being extensively used as principal and auxiliary colouring matters. Investigations were undertaken for the possible preparation of certain rapid fast colours which are not readily available in required quantities due to war. The experiments conducted in this direction apppeared encouraging and five samples produced have been sent for test and report to the Department of Chemical Technology, University of Bombay.

(*b*) The second dyeing demonstration provided for Central Division was organised at Valsang in Sholapur district in May 1939 soon after its work at Poona Industrial Exhibition was over.

Dyeing on laboratory and large scale was demonstrated to the local dyers and they were given all possible help and guidance in the matching of colours. Trials for new shades were also satisfactorily carried out. Further, the local dyers and a few weavers were shown

tyeing and dyeing of yarn and six samples of curtain cloth were taken out on a local weaver's loom with different colour combinations. Local dyehouses were visited and assistance was given in effecting necessary improvements in the method of preparing Napthol and Base solutions which led to the resulting shades acquiring brilliancy and depth. Indanthrene blue was the only vat colour used at this place and that too was wrongly applied. Proper method of its use was demonstrated. Ten persons were given training in block printing covering all stages, e.g., preparing of pastes, printing, developing and finishing of the printed materials, etc.

Four persons were trained in aerograph printing.

On completion of its work at Valsang the demonstration was transferred to Karkamb in the Pandharpur Taluka of Sholapur District in November 1939. The local weavers and others took keen interest from the beginning in the demonstration and for nearly three months the number of regular students attending the demonstration averaged from 10 to 12 apart from casual students who numbered 5 to 6 every day.

Demonstrations were given frequently in Napthol, Indanthrene and Sulphur dyeing. All the processes such as preparation of Napthol and Base solutions, reduction vats, etc., were explained in detail and notes were given to the students. About ten students have very satisfactorily completed their training and are expected to set up small dyehouses on cottage industries basis if they can in present time obtain colours and chemicals in required quantities at reasonable rates.

Seven students were given instructions in block printing, first on paper, and then on cloth with detailed notes regarding preparation of printing pastes, pads, etc. They were able, after the training to turn out decent attractive designs.

Printing of yarn with different colours in attractive shades was introduced. Six students picked up this new type of work fairly well. Two local weavers were supplied with two lbs. of such printed yarn to convince them of the utility of this process. The woven fabrics in pleasing designs created interest among others. The students are anxious to set up small works but are faced with difficulties in obtaining dyes and chemicals at reasonable rates due to war.

(c) The third demonstration which was working last year at Bhiwandi in the Thana District continued its work there till December 1939. The art of hank yarn printing was unknown to the dyers and weavers of the place. Printing of yarn on simple lines with wooden blocks was, therefore, demonstrated. Three weavers soon after the completion of their training in this branch started the work in their factory for the production of attractive marketable goods. The process soon became popular due to its novelty and utility and seven weaving

factories got their men trained under the guidance of the demonstrator and engaged three students of the demonstration. One weaver of Malegaon visited the demonstration, learnt the process and started yarn printing at his place.

One dyer of Nasik attended the demonstration and learnt spray printing, dyeing and yarn printing work and is reported to be doing well. Eleven local weavers in course of time adopted this new process.

Three proprietors of weaving factories who imported dyed yarn from Bombay were trained in dyeing of cotton, silk and artificial silk with fast colours. Two set up their own dye-houses.

Eight students regularly attended the demonstration and received practical training in cotton and silk dyeing with different ranges of fast colours. Six of them started dyeing on cottage basis.

The demonstration was transferred from Bhiwandi to Ahmedabad in January 1940. Twelve persons connected with dyeing, printing or weaving work began to attend the demonstration regularly.

One printer who completed training in yarn printing got employment in a Bombay mill whereas one set up yarn printing work on a small scale at Cambay.

Two students on finishing training in cloth and yarn printing, spray, direct and discharge printing have been engaged by a millowner of Java to organise a printing section in his mill.

About 28 casual students received instructions and guidance in their work regarding dyeing and printing.

All the hree dyeing and printing demonstrations did satisfactory work during the year and the introduction of the new process of printing yarn for weaving attractive fabrics at the Belgaum demonstration extended to other places by the other two demonstrations was keenly appreciated by weavers and dyers.

52. **Expenditure on Peripatetic Weaving and Dyeing Institutions.**—Details of this expenditure will be found in Appendix A to this report.

53. **Government Hand Weaving Institute, Poona.**—Fifty-four students, who were undergoing training in 1938-39 in the different courses of he Institute, appeared in the sessional examinations held in April 1939. Of these 44 passed—18 in the first year Advanced course, 12 in the second year Advanced Course and 14 in the Artisan Course. Six students also appeared in the City and Guilds Institute final grade examinations in plain weaving of whom three passed in I Class and 1 in II Class. Arrangements were made as usual to provide for six months practical training to students who passed out from he Advanced and Artisan Courses in mills, some handloom weaving factories and small power loom factories.

Thirteen new students were admitted to the first year Advanced Course and seventeen in the Artisan Course in June 1939. Eighteen students of the first year Advanced Course who passed in the sessional examination were promoted to the second year Advanced Course. The total number on roll on 31st March 1940, was, however, forty.

During the year under report it was decided to set up a power loom in the Institute to acquaint the students with power weaving on up-to-date lines side by side with the training in hand-loom technology. It is expected to instal the loom with all requisite accessories and work it from June 1940.

During the year the students were also taken on an instruction tour in the Northern Division of this Province to acquaint them with the different processes and machines connected with the textile industry, particularly hand worked appliances.

Expenditure.—The expenditure incurred on the Institute during the year is given in the statement under Appendix B to this report.

54. **Improvements in Appliances, etc.**—(*a*) The beam system to which a detailed reference was made in the paragraph 83 of the Annual Report of this Department for 1934-35 was further popularised during the year. As a result 25 beams were introduced during the year.

(*b*) With a view to popularise weaving of cloth from hand spun yarn arrangements were made to depute some weaving masters of this Department to spinning and weaving centres organised by the All-India Spinners Association to receive training in sizing and weaving of hand spun yarn so that on return after the training to their headquarters the masters can popularise these activities through the medium of the peripatetic institutions of this Department.

(*c*) Demonstration of the shoe lace and file string machine was continued this year also by the weaving school at Yeola which aroused considerable interest. A good quantity of shoe laces, file strings, tag, *pyjama* cords, fancy packing bandings, etc., were manufactured and shown to people interested in same. As a result of this two braiding machines were introduced. The working of this equipment was shown at the Industrial Engineer's Workshop of this Department in Bombay also which gave rise to the possibility of introducing this industry amongst those unemployed as a result of Prohibition. The Employment Officer was accordingly furnished with necessary information for aiding the unemployed in setting up this industry. One local party also made a machine with the assistance of this Department and is now making a fair business in Bombay selling shoe laces, banding, etc., etc.

55. **Miscellaneous Activities of the Weaving Section.**—The staff of the weaving and dyeing institutions rendered assistance to the public in

solving their technical difficulties in hand weaving and allied industries and by supplying them estimates for small hand-loom and dyeing and printing factories. Some examples of such work are noted below :—

(1) One weaving demonstrator assisted the All India Spinners Association Centre at Gurlhosur in design work and setting up of one spinning wheel fitted with ball bearings whereas one weaving master and one dyeing master assisted the members of the same association at Ahmedabad in adopting dobby work and dyeing and printing on modern lines.

(2) At the request of the All Karnatak Fourth Kurubar Conference a special demonstration in carding, spinning and weaving of wool by improved appliances was organised at Gokak in May 1939 to the satisfaction of the large number of persons attending the Conference.

(3) Arrangements were made to deliver lectures on hand weaving, dyeing and printing, etc., with practical demonstrations where possible under the auspices of rural development classes organised at different places.

(4) A detailed note with estimate for a small hand weaving factory of 10 handlooms was supplied to a party in Bombay whereas a party in Poona was given detailed advice and estimate for setting up one loom in its cottage for working on the same as a spare time occupation.

(5) A detailed note on dyeing of art silk and finishing of artificial cloth was furnished to a party in Surat.

(6) An instructive note on hand sizing processes was supplied to a party.

(7) A detailed estimate and assistance in organising a dye-house were given to the N. C. D. Industrial Co-operative Association, Ahmednagar.

(8) One Muslim weaver of Malegaon designed a dobby but was facing difficulties in popularising it. His dobby was brought to Bombay and a test of the same was taken at the V. J. Technical Institute. This dobby has been found to be very useful and it will be demonstrated by a weaving school of the department to popularise it amongst weavers.

(9) One party designed a charka in Mysore and a test of the same was taken and report furnished to Government.

(10) The Weaving School working at Yeola assisted the District Industrial Co-operative Association organised at Yeola for marketing of hand-loom products in producing cloth by the members of the Association with variegated designs and patterns.

(11) The Parsi Industrial Institute, Tardeo, was given technical advice and assistance in its requirements relating to textile section.

CHAPTER VI.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES —(contd.)

TANNING INDUSTRY.

56. **Tanning Demonstration Parties.**—During the year under report the Department maintained six demonstration parties. The centres visited by these parties were as shown below :—

Division.	District.	Place.
Northern Division	Panch Mahals ..	Godhra.
Northern Division	Kaira	Nadiad.
Northern Division	Thana	Masoli.
Central Division	Ahmednagar ..	Ahmednagar.
Central Division	Ahmednagar ..	Bhingar.
Central Division	West Khandesh ..	Nandurbar.
Central Division	West Khandesh ..	Ranala.
Southern Division	Belgaum	Nipani.
Southern Division	Dharwar	Haveri.
Southern Division	Ratnagiri	Malvan.
Southern Division	North Kanara ..	Sirsi.

57. The following is a brief account of the work done by the demonstration parties at each of the centres visited by them :—

(1) **Tanning Demonstration at Godhra.**—The demonstration started work at this place in November 1938, and finished it in August 1939. The main feature of this demonstration was the use of sodium sulphide for the soaking of dried hides and suitable changes in further processes. This was demonstrated to the cottage tanneries with the result that better yield and colour were produced than by the processes used by them. Owing to great heat in summer these tanners used to lose a good number of hides due to putrefication in soaks. This has been arrested by the use of chemical adjuncts and thus the loss has been minimised but the output of the centre has not increased appreciably although all round improvement in the finished products has been achieved. The average daily attendance at this centre was 4.

(2) **Tanning Demonstration at Nadiad.**—This centre was considered a big tanning centre some years ago, but no tanning was done at this centre till the demonstration was opened due to the fact that there was no demand for the very poor quality of leather produced by the tanners with their old methods. The demonstration introduced new lines of tanning such as bag tannage for sole leather. The centre used to import this leather for local consumption from other centres, but now this type of leather is produced locally and has got a good market with better prices for the goods. The average daily attendance at the centre was 3.

(3) **Tanning Demonstration at Masoli.**—The demonstration was working at Masoli but due to the want of a suitable demonstrator it had to be closed down till February 1940 when it restarted its activities under a new demonstrator selected from the past students of the Tanning Institute of the Department.

(4) **Tanning Demonstration at Ahmednagar**—This centre has a unique combination of old and new methods of tanning. At this centre there are two modern tanneries. In addition to this a large number of model tanneries is working on cottage industry basis. The demonstration helped the village tanners. It also helped a big tannery in the use of pigment finishes in the manufacture of coloured belting. This tannery increased its output by 50 per cent. and manufactures, coloured belting and case hides, etc. and thereby gives regular work to leather workers. At the local slaughter house improved method of flaying was demonstrated. Formerly good hides were spoiled by cuts. By the improved methods the number of cuts per hide has been reduced and some of the hides are without cuts. The average attendance was 9 at this centre.

(5) **Tanning Demonstration at Bhingar.**—While the demonstration was at Ahmednagar, the demonstrator paid visits to this centre which is only 2 miles away from Ahmednagar. Here no skins were tanned although there was a big local demand. Since the opening of the demonstration at Ahmednagar the local demand for skins is fulfilled by this centre. The collector of Ahmednagar gave a grant of Rs. 100 for providing improved tools and equipment to the tanners at this centre. The Department also supplied a few tools from the grant at its disposal to the tanners of this centre.

(6) **Tanning Demonstration at Nandurbar.**—This is one of the large tanning centres in the West Khandesh District. There are about 50 houses of leather workers. At this centre bag tanning of buffalo hides and improved methods for the manufacture of sole leathers were demonstrated. Dyeing and finishing were not done in the past. This work has been done now. The difficulty at this centre was scarcity of water. This question was taken up by this Department

and the case of the tanners was represented to the Collector and President of the Mun cipality. Here also instructions were given in flaying so that the hides are now free of butcher's cuts and the butchers and tanners are getting good prices for their hides. The average daily attendance at this centre was 30.

(7) **Tanning Demonstration at Ranala.**—This is a small tanning centre. Here the tanners are shoe-makers. Here also the same difficulty was experienced as was experienced at Nandurbar. The demonstrator taught bag tanning of hides for soles which removed the difficulty of shoe-makers. The average daily attendance at this centre was 4.

(8) **Tanning Demonstration at Nipani.**—This is one of the large centres of tanning. Here there are about 60 houses of dhors. The main tan is bag tanning of hides. Dyeing and finishing were not known at this centre. The demonstrator taught this and a few are manufacturing dyed leather at this centre for local consumption. They are also getting better prices for their goods. Chrome tanning was also introduced at this centre. The average daily attendance was 15.

The Collector of Belgaum gave a grant of Rs. 100 for the purchase of tools and equipment for the use of tanners of the centre. A similar grant was also made by this Department.

(9) **Tanning Demonstration at Haveri.**—This is one of the large tanning centres in the Dharwar District having about 100 houses of leather workers. The demonstration was attended by a larger number of tanners to learn the new and improved methods in tanning. One of their difficulties is scarcity of water and space for extension. A representation from these tanners has been forwarded to the Collector for a plot of land having a well for favourable consideration. The average daily attendance was 15.

(10) **Tanning Demonstration at Malvan.**—The main feature of this tanning centre is that a large quantity of leather is produced which is converted into finished products, viz., sandals, etc., and the finished goods are sent to Bombay for sale. The demand for leather in this centre is partly supplied by Kolhapur, etc., and partly by the local tanners. Dyeing and finishing of hide and tanning of skins for linings were not done at this centre. This was taught to the tanners. The quality of sole leather has been mproved. The process of producing good quality of sole leather by ain bark tanning was demonstrated and the tanners use this material and the use of Babul and Turwad barks has consequently been reduced. The average daily attendance was 8.

This Department made a grant of Rs. 100 for the purchase of tools and equipment to the Chambhars of this centre.

(11) **Tanning Demonstration at Sirsi.**—This is one of the big tanning centres in the North Kanara District having a good quantity of raw hides and tanning materials. There are about 200 houses of leather workers. The demonstration has been shifted to this centre very recently and the work is progressing satisfactorily.

The Collector of the District has given a grant of Rs. 100 for the purchase of tools and implements for the use of the tanners.

It is gratifying to note that the work at Kalak, District Broach, has been put on a permanent footing this year by the formation of a Tanners' Producers' Co-operative Society.

58. **Expenditure.**—Details of expenditure on the peripatetic demonstration parties during the year under review are given in Appendix C.

59. **Technical advice given and other assistance rendered.**—A complete scheme to start a small village tannery was drawn up for one Mr. Bhikubhai Dhruva. It is reported he has started his tannery and the work in his tannery is progressing.

One tanner from Dharavi was advised regarding the manufacture of bag tanned buaffalo hides as well as tanning by contact process of buffalo hides for the manufacture of soles, belting, etc.

Advice was given to the Western India Tanneries Limited, Dharavi, regarding the manufacture of army upper leathers.

CHAPTER VII.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES—(contd.)

COTTAGE INDUSTRIES OTHER THAN HANDLOOM WEAVING AND TANNING.

60. In addition to the work of the Department for the development of hand weaving and tanning industries as described in Chapters V and VI, the Department also extended its activities to some other cottage industries as named below:—

(1) Cane and Bamboo Work.

(2) Lacquer work.

(3) Coir Manufacture.

(4) Art-Crafts.

(5) Potteries.

(6) Sericulture, and

(7) Match making.

A brief account of the work done in this connection by the Department is given below :—

(1) **Cane and Bamboo Demonstration.**—A batch of fourteen students attended the demonstration at Hubli from March 1939 and completed its training in the manufacture of different types of cane articles such as office chairs, easy chairs, round chairs, stools, teapoys, flower baskets of different patterns and sizes, bags, waste paper baskets and other household articles. A fresh batch of ten students began to attend the demonstration from October 1939 and will complete its training in March 1940.

Each year 30 to 40 students undergo training in cane work. With a view to assisting them it was requested by the All-India Spinners Association, Karnatak, that the students may be given free cane supply from Gund Range (North Division, Kanara). Government were pleased to grant a free permit for cane worth Rs. 25 to each student who completed his training in cane work at the demonstration at Hubli for a trial of 3 years in the first instance subject to the following conditions :—

(*a*) that the total number of permits should be limited to 40 per year,

(*b*) that the Secretary, All-India Spinners Association, Karnatak Branch, Hubli, gives a certificate to each such student, and

(c) that the student makes his own arrangements for cutting the cane and transporting it to his place of business. It is hoped the students will benefit by this arrangement in establishing and running their business after the free training imparted to them at the demonstration.

Expenditure.—Expenditure on and receipts from the Cane and Bamboo Demonstration during the year were as detailed in Appendix D.

(2) **Lacquer Work Demonstration.**—As reported last year two demonstrators deputed to Mayo School of Art, Lahore, for training in superior types of lacquer manufacture returned to Bombay on completion of their training to organise a demonstration in this Province.

The programme of work laid out in this connection was to initiate the village artisan in turning work and application of lacquer coating on hand lathes for (1) " fill up " work, (2) " abri work " and (3) " chase work " so as to train the artisan in all the branches of the industry on up-to-date lines and designs.

All the abovementioned stages of work with improved equipment and tools should help a lacquer worker in producing attractive, superior type of marketable articles.

The first demonstration was organised in Poona in June 1939. Twleve candidates joined the institution of which only 8 continued the course for completion in the beginning of 1940. Several adult artisans who could not leave their work on which their livelihood depends attended the demonstration part time and received technical guidance and advice.

The regular students were trained to manufacture in pleasing colour schemes such articles as artistic powder boxes, electric lamp stands and paper weights, etc., etc. It is considered that on completion of the one year's course in all the branches of the industry on modern lines, the students would be able to set up their own small establishments.

Expenditure.—The expenditure on the lacquer work demonstration and receipts from it during the year under report were as detailed in Appendix E.

(3) **The Coir Manufacture School.**—The coir manufacture school was first organised in Malwan in the Ratnagiri District in January 1939. It started its regular work with up-to-date equipment and finished the first term of the course in July 1939. A fresh batch of students was taken up in August 1939 which completed its training in the end of January 1940. During these two terms 42 regular full time students and 11 part time students were trained in the different processes of coir manufacture with modern improved fitments and implements. To provide the students with facilities for purchase of raw materials at reasonable rates and marketing of their products efforts were made to organise co-operative societies.

On completion of work at Malwan the school was transferred to Shiroda in the Vengurla Petha of the Ratnagiri District where there is a large number of coir workers doing work by crude methods. The school started its work on 1st March 1940, with 28 students.

In addition to its normal activities of training of students in the prescribed course, the school extended its work in organising special demonstrations to meet the requirements of the industry in different directions. Accordingly, a special demonstration in coir yarn spinning and mat making was given at Malwan in co-operation with the Village Uplift Van programme.

At the request of the local member of the District Rural Development Board (Ratnagiri) demonstrations were also held at Vengurla to show the coir workers the exact processes of coir yarn spinning and mat making. A display of articles turned out by the students of the Coir School together with a practical demonstration of improved spinning wheel was also organised at the Tutorial English School, Shiroda, which was largely attended by students and coir workers.

The Coir Supervisor continued during the year his survey work of the industry and visited several villages of the Thana, Kolaba, Kanara, Dharwar, Bijapur and Ahmednagar Districts.

The Coir Supervisor has yet to complete his survey work at several other districts in the Province.

Expenditure.—The expenditure on and receipts from the Coir Manufacture School during the year under report were as detailed in Appendix F.

(4) Scheme for the Training of Hereditary Art-crafts Workers.—The scheme provides for the award each year of ten scholarships of Rs. 30 per mensem to hereditary art-craft workers of this Province to enable them to receive up-to-date training for two years at the Reay Art Workshop under the Sir J. J. School of Art, Bombay, or a similar Art Institution elsewhere. The first batch of ten students admitted to the scheme in June 1938 completed successfully the first year of training and continued its course in the second year. This batch would complete the training in May 1940.

A new batch of ten students was admitted to the scheme during the year under review in June 1939.

The details of training, the number of students selected for the different crafts and the places they belong to are given below :—

No. of students.	Craft pursued.	District.
2	Engraving ..	.. North Kanara and East Khandesh.
1	Enamelling and Engraving..	Belgaum.
3	Gold and Silver work ..	Bijapur, Thana and East Khandesh.
2	Wood carving including sandal-wood work.	North Kanara and East Khandesh.
1	Carpentry	Surat.
1	Stone Carving	Dharwar.

These students are expected to complete their training in June 1941.

The Artist Designer appointed under this scheme continued his efforts in affording assistance to the art-crafts workers in the production of attractive articles suitable to the taste and requirements of a large number of the public and giving them training in the use of improved implements, etc., at different centres.

Government sanctioned a scheme for providing improved tools and appliances to some art-craft workers. Half the cost of the tools and appliances supplied to the selected worker is treated as a free grant and the remaining half as an interest free loan to be recovered from him in small monthly instalments of Rs. 3. If the scheme proves a success its extension will be considered.

In order to assist in the sale of articles of modern designs produced by the artisans under the guidance of the Artist Designer, Government placed at the disposal of this Department an amount of Rs. 2,000 to be used for purchasing the articles for testing their sale possibilities in Bombay.

(5) **Potteries Manufacture.**—A detailed account of the scheme for ascertaining the possibilities of pottery manufacture in the Province of Bombay was given in paragraphs 90-92 of the Annual Report of this Department for 1938-39. The survey and experimental work described therein was conducted further and completed during the year under review. The survey and experimental work has shown that there are available in the Province large quantities of suitable clay and other raw materials for the development of the pottery industry. The report giving detailed information and estimates, etc. is in the press and is expected to be published shortly.

(6) **Sericulture Industry.**—A scheme for a survey of prospects and possibilities of introducing sericulture in this Province was sanctioned by Government and the services of one of the Senior Sericultural Inspectors of the Mysore Government were obtained on loan from April 1939. This officer surveyed those districts which appeared *prima facie* suitable for the revival of the industry. As a result of the survey it has been found that certain tracts in the Belgaum, Dharwar, Poona, Satara, Nasik and Ahmednagar Districts seem to be climatically suited for production of silk and there appears sufficient justification for trying out the Sericulturist's recommendations for the establishment of a sericulture farm at Belgaum in the first instance. The survey work was not complete at the close of the year as some places in the Northern Division had yet to be visited. Meanwhile a scheme for a sericulture farm at Belgaum was put up to Government. This scheme was sanctioned by Government and will be introduced in 1940-41.

(7) **Scholarships in Match Making Industry.**—In connection with the training in Match Making Industry on cottage basis at the Sodepur Ashram, Bengal, Government sanctioned 7 scholarships of Rs. 20 per mensem each for a period of 6 months to suitable candidates for training in match manufacture. The selection of the suitable candidates was made after personal interviews. The candidates selected were also granted 3rd class railway fare from the nearest railway stations

of their residence to Calcutta and back. A sum of Rs. 500 was also paid as premium to the Ashram. Five candidates are now undergoing training at the Ashram. The first monthly report of the students received from the Secretary of the Ahsram showed that students were progressing well.

CHAPTER VIII.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES —(concld.)

MARKETING OF HANDLOOM PRODUCTS.

A—Cotton.

61. **The Government of India Grant.**—The Government of India grant received by this Province for the Marketing Scheme for Handloom products was Rs. 40,366 for the year 1939–40. The expenditure incurred on the Scheme during the year under review amounted to Rs. 45,081.

62. **Working of District Industrial Associations.**—During the year under review the District Industrial Co-operative Associations at Ahmednagar, Hubli, Ahmedabad and Yeola, progressed satisfactorily. The Yeola Association which was placed in charge of the Marketing Officer (Handloom Products) due to difference of opinion among the members of its Board of Management as referred to in the last year's report, continued to function under his guidance till about the end of February 1940. Very strenuous efforts were made by him to put the Association on smooth and sound working lines and the results achieved were satisfactory. In view of this the Joint Board controlling the scheme asked the Marketing Officer (Handloom Products) to hand over the affairs of the Association to the elected Board of Directors. The old Board was re-elected and as the office-bearers promised to run the Association efficiently it was placed in their charge at the end of February 1940.

63. **Working of the Associations Organised during the last year.**—The new Associations which were organised in the last year at Sholapur, Malegaon and Kamatgi have been progressing slowly. The last one which started functioning from September 1938 tried an experiment in the use of handspun yarn by the weavers who were accustomed to using mill-yarn for their production but it was found extremely difficult to persuade them to take to handspun yarn. The Association had made arrangements with the All India Spinners Association, Karnatak Branch, for the supply of hand spun yarn and also for the sale of cloth produced from handspun yarn. But as the demand for work from a very large number of weavers in the District came to the Association it was decided by the Board of Directors of the Association that the work in mill-yarn should be started as on the lines of other Associations.

The Association started recently one branch at Bagalkot with a view to sell finished products on a large scale round about Bijapur District.

64. **Belgaum Association.**—As several representations had been received by the Department in connection with the starting of an Industrial Co-operative Association at Belgaum and as weavers and sympathisers were able to collect the necessary share capital to the extent of Rs. 2,000 an Association was organised and registered there. The funds which were available due to the non-organisation of the Bhiwandi Association were put at the disposal of this new Association. It is too early to comment on the working of this Association but it can be said that it has begun to show progress.

65. **Dhulia Association.**—Efforts to organise this Association made by this Department in collaboration with the officers of the Co-operative Department and the local Revenue Officers have at last proved successful. The Association was able to collect the required share capital for registration, etc. and the same was registered on 1st March 1940. The applications for the staff, etc. were invited. Government orders were, however, awaited at the end of the year to give this Association, grants both recurring and non-recurring to begin work on the usual lines.

66. **Sangameshwar Association.**—Steps taken to organise an Association at Sangameshwar for the Mahar weavers of Malegaon Taluka, District Nasik, did not meet with success as the Mahar weavers would prefer cash subsidies to getting raw materials at cheap rates as provided for in the scheme. The local conditions moreover did not seem favourable for the formation and conduct of a co-operative Association by the Mahar weavers. Efforts made to organise the proposed Association at some other suitable centre near Sangameshwar also proved unsuccessful.

In spite of the above position the Joint Board has thought it advisable to render some help to the Mahar weavers due to their very poor condition. Government have been moved to put the grants, etc. which were set apart for an independent Association at Sangameshwar at the disposal of the Malegaon Association. This Association will try to help the Mahar weavers.

67. **Introduction of New Designs.**—During the year under report, the Textile Designer of the Department visited the various Associations frequently to advise them with regard to the manufacture of new designs and patterns. Designs with printed warp were introduced in sari borders and handkerchiefs, etc. Shirting cloths in printed warp were also manufactured during the year. Manufacture of figure coatings, sarees and shirtings in check pattern was also undertaken during the year. The Textile Designer has introduced about 9 designs in printed warp shirtings, 30 patterns in coatings both cotton and union and about 25 new saree designs in different qualities, about 16 border patterns in handkerchiefs and about a dozen patterns in door curtains, teapoy covers, etc.

68. **Results of the Year's Working.**—The Associations at Ahmednagar, Hubli, Ahmedabad, Yeola, Sholapur, Malegaon, Kamatgi, were in existence during the whole of the year. The Belgaum Association began to function from June 1939. The Associations which were established in 1937–38 have made good progress. They will, however, still require some time before they can be self-supporting. It is found by experience that even though majority of weavers are ignorant and apathetic towards the new style of working, they will if they are given sufficient knowledge and equipment begin to take interest in the work which is intended for their welfare. The Associations have so far done useful work. They have, by supplying yarn at relatively low rates to weavers, generally brought down the cost of yarn. They have introduced several new types of woven goods, such as coatings, shirtings, curtains, bed-covers, tea-poy covers, table cloths, towels, etc., etc., and have provided regular work to a certain number of weavers.

An idea of the results of the working of the Scheme can be had from the statements of memberships, capital, turn-over, and gross profit of each Association for the years 1938–39 and 1939–40, *vide* appendices G and H. The total sales effected by all the Associations during the year amounted to Rs. 1,23,580–10–6.

B—Woollen Industry.

69. **The Government of India Grant.**—The Government of India grant received by this Province for the Scheme for the Development of Cottage and Small-scale Woollen Industry was Rs. 13,948 for 1939–40. The actual expenditure incurred on the scheme during the year under review amounted to Rs. 22,971.

70. **Working of the Scheme.**—As mentioned in the last year's report the work of the scheme was carried on through the agency of the two Industrial Co-operative Associations organised at Ahmednagar and Hubli, subsidized from the Government of India Cotton grant. Out of the total grant sanctioned by Government to these Associations, the actual expenditure incurred by the Ahmednagar Association was Rs. 200 as non-recurring and Rs. 3,074 as recurring, and the expenditure of the Hubli Association was Rs. 6,000 as non-recurring and Rs. 1,800 as recurring.

Besides the above, Government of India also sanctioned an additional non-recurring grant of Rs. 1,707 for the two Associations representing the pro-rata share of the Provincial Government out of the balance of the grant-in-aid left after meeting the basic recurring grants to the Provincial Governments.

71. **Working of the District Industrial Associations.—**

(1) Ahmednagar Association.—The work of weaving new types of woollen fabrics was conducted on a large scale during the year under report. A part of these goods was woven at Ahmednagar proper and also at Miri Taluka Nevasa, District Ahmednagar. The Association has installed 7 improved types of fly-shuttle looms at Miri. The wool weavers are provided with work whenever they are free to undertake it. The centre at Miri thus supported many weavers by giving them the necessary help in this work when they were free from agricultural occupation.

The woollen products woven at this centre were variegated and proved to be popular in the Ahmednagar District. These products included kambals, check rugs, blankets over-coating cloth and shawls, etc. The Hospital blankets required by Ahmednagar Civil Hospital were manufactured and supplied by the Ahmednagar Association. These blankets were woven on fly-shuttle looms at Miri and were dyed and finished entirely by hand process at the dye-house of the Association. These compared very favourably with machine-made blankets.

The Association also helped the Dhangals of Vambori, District Ahmednagar, in finding market for their locally made products.

Woollen goods worth Rs. 10,522-11-3 were sold by the Association during the year under report. The Association earned a gross profit of Rs. 855-7-0.

Dyeing and Finishing plant for the Ahmednagar Association.—As mentioned in the last year's report Government sanctioned a grant of Rs. 5,000 for the finishing machinery. The machinery consists of one cropping Machine and one fulling stock machine. A small scale washing machine is also being manufactured at one of the local workshops and will soon be installed. For the raising of woollen cloths no machine has been provided but the work is being done on a wooden frame specially prepared for the purpose. The raising process is being done by hand by means of hand raisers. The setting up of this plant will now effect saving of the expenses which are being incurred in the transportation of the goods to Bombay for finishing and again bringing them back to the distributing centres.

(2) Hubli Association.—As mentioned in the last year's report the Wool Weaving Branch of this Association was opened at Bijapur to supervise the working of the scheme conducted at Ibrahimpur and Darga. Arrangements were made to supply raw materials to the wool weavers and purchase the woven products. Goods worth about Rs. 1,525 were manufactured at Darga and Ibrahimpur. The finishing

of these goods, however, had to be done in Bombay which was found to be very inconvenient. It is proposed to get these products finished at the Dyeing and Finishing plant installed at Ahmednagar.

The wool weavers of Bijapur District have now organised a separate producing society of their own for the Bijapur District with the aim of carrying on the work in the same way as was conducted by the Wool Branch of the Hubli Association. As soon as this Society gets a firm footing, it is proposed to stop the centre at Bijapur and to shift it to another suitable centre.

A Silver Medal was awarded to the Hubli Association for the woollen articles manufactured and finished by the Association in Shri Shiddeshwara Exhibition held at Bijapur in the month of January 1940.

Woollen goods worth Rs. 1,060-5-6 were sold by the Association during the year under report. The Association earned a gross profit of Rs. 134-9-9.

72. **Blankets for the Army.**—Defence Services of India require a number of Army or Barrack blankets annually. On account of the war, the demand has increased considerably owing to the overseas requirements, and the Government of India accordingly placed with the Woollen Mills big orders for these blankets and other types of woollen fabrics and the mills had to start working night shift to satisfy the orders. The possibility of roping in, the handloom weavers for the manufacture of blankets was, therefore, discussed at an informal conference held in the office of Mr. Gulzarilal Nanda, the then Parliamentary Secretary. This Conference was attended by Mr. Nanda, Mr. F. Stones, of E. D. Sassoon and Co., the Director of Industries, the Wool Expert of this Department and the representative of the All-India Spinners Association. As per suggestions made by Mr. Stones various types of samples were manufactured on handlooms. Raw materials for this type of work are ordinarily available in the villages of this Province but the difficult problem was to train the village wool weavers to manufacture goods of certain standard quality and fixed specifications. The type of fabric largely woven by these village wool weavers is a kambal. Experiments were, therefore, made to weave kambals of a certain standard and specifications and finish in order to give them a get up of the mill made army blankets.

73. **Delhi Conference.**—The question of manufacturing these blankets was further discussed in the conference of representatives of the various Provinces of India held at New Delhi. The details of manufacturing cost, etc., of these blankets prepared by this Department and the difficulties experienced in organising this work amongst the illiterate village weavers were placed before the Conference. As a result the usual specification for these Barrack blankets was modified to suit the handloom industry and a special specification was laid down for the

handloom blankets. Samples were then prepared by the Industrial Associations supervised by this Department according to the new specifications and sent to the Chief Inspector of Stores and Clothing, Cawnpore. The samples turned out were found to compare favourably with mill-made blankets.

In anticipation of securing a big order for these blankets manufacture of the same was started at Bhingar, Pimpalgaon, Miri, Mandva, Takli-Bhan, Vambori, Sonai, Kendal, Ghodegaon and other villages of the Ahmednagar District in the Central Division and also in a few villages round about Bijapur in the Southern Division. An order for 6,000 blankets has since been received from the Supply Department and it will provide work to a large number of wool spinners and weavers.

The work of fulfilling the order for the Army blankets has been entrusted to the District Industrial Associations at Ahmednagar and Hubli. The difficulty in manufacturing Army blankets is the finishing of the blankets.

The Department has put up a small Finishing Plant under the control of the Ahmednagar Association. The process of milling, raising and finishing these blankets will be carried out at Ahmednagar with the help of this plant.

C—Sales Depot for the Products of Handloom, Cottage and Small-scale Industries.

74. Government has recently sanctioned the scheme prepared by the Department of Industries and approved by the Sub-Committee for the Marketing of Handloom Products of the Industries Advisory Board, for the establishment of a Sales Depot in Bombay for the marketing of products of handloom and cottage and small scale industries. The Depot will have three sections, viz. (1) Cotton Section to deal with the products of cotton handloom industry, (2) Woollen Section to deal with the products of cottage and small scale woollen industries, and (3) Other Industries Section dealing in the products of all other cottage and small scale industries. The total capital for the Depot will be Rs. 20,000.

The Depot will be opened in the premises of the Bombay Swadeshi Co-operative Stores Company, Limited, at the Sir Phirozeshah Mehta Road. The Manager of the Stores will supervise the working of the Depot. These arrangements are made on certain terms and conditions approved by Government and accepted by the Stores. At this Depot goods will be received for sale from the District Industrial Associations and co-operative societies on consignment basis. Goods will also be obtained by outright purchase from artisans and small scale and cottage industries and stocked for sale at the Depot. Products of the students

of the weaving schools and demonstrations as well as the Leather Working School, Khar, will also be displayed at the Depot for sale.

The Depot will be a testing ground to show what products of the cottage and small scale industries find a ready market. Producers will then be instructed to manufacture such articles as find a ready market and supply the same to the Depot and other dealers.

CHAPTER IX.

GRANTS-IN-AID TO PRIVATE BODIES FOR THE DEVELOPMENT OF COTTAGE INDUSTRIES.

75. As in the previous year, Government made grants-in-aid to the All-India Spinners Association and the All-India Village Industries Association for carrying out approved schemes of work for the development of rural industries.

76. **Grant-in-aid to All-India Spinners Association.**—A provision of Rs. 70,300 was made for grant-in-aid to the All-India Spinners Association to assist it in conducting its different activities in this Province. The Association utilised an amount of Rs. 53,719-8-11 on different items as detailed below :—

		Rs.	a.	p.
1.	Research Workshop, Ahmedabad ..	4,138	6	0
2.	Hubli Workshop	1,835	9	0
3.	Making and Supplying of improved implements	4,281	0	0
4.	Instructors for introducing new implements, and giving training to the spinners in use thereof and training weavers in printing, etc.	10,159	13	0
5.	Training class for workers	2,634	4	11
6.	Subsidy on cotton and woollen Khadi production	30,670	8	0
	Total ..	53,719	8	11

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An idea of the work done under the various schemes is given below :—

(1) Research Workshops at Ahmedabad and Hubli.—The Association was given a grant-in-aid for examining and effecting improvements in the prevalent patterns of spinning wheels, carding bows and other implements as also for designing new and more efficient models. The work conducted in these workshops during the year related to (*a*) Magan Charkha, a double-spindled charkha worked by feet, (*b*) automatic slivering machine, (*c*) dobbies for weaving attractive designs for saree borders, and (*d*) single knife automatic ginning machine. Efforts were also made to increase the speed in weaving.

(2) Making and Supplying of Improved Implements.—With the aid of the Government grant under this head, the Association was able to manufacture and distribute during the year 664 improved charkhas, 49 double-spindled Magan Charkhas, 20 fly-shuttle looms and a number of carding bows, reeds and healds etc. at prices within the reach of the villager.

(3) Instructors for Introducing New Implements.—The grant under this head was utilised by the Association to engage 38 trained workers to introduce new implements and for giving training to villagers in carding, spinning, weaving and cloth printing.

(4) Training Class for Workers.—Special training classes were held at Saswad (Poona District) and Ahmedabad in this Province and the services of instructors were secured by the Association for imparting training to the village spinners and weavers on proper lines.

(5) Subsidy on Cotton and Woollen Khadi Production.—The Government grant under this head was made to provide for a subsidy at the rate of anna one per square yard of cotton khadi produced from hand spun yarn and at annas eight per woollen blanket.

77. **Grant to All-India Village Industries Association.**—Government sanctioned a grant to this Association for (1) conducting various schemes mentioned below for the development of village industries, (2) the opening of a demonstration and Training centre at Poona for hand-made paper (*vide* paragraph 79), and (3) starting a production-cum-demonstration centre for village industries (*vide* paragraph 80).

The amounts of expenditure sanctioned by Government and those actually spent by the Association under (1) above are given below :—

Scheme.	Expenditure sanctioned by Government.	Amount actually spent by the Association.
	Rs. a. p.	Rs. a. p.
1. Training in paper making	1,350 0 0	1,310 0 0
2. Training in Oil pressing	900 0 0	695 0 0
3. Training in button making	450 0 0	449 15 11
4. Manufacture of gul from date-palm juice	10,000 0 0	3,068 2 4
5. Training in coir industry	2,500 0 0	3,296 3 3
6. Development of hand-made paper industry	2,500 0 0	2,439 11 1
7. Publication of leaflets	500 0 0	536 9 0
8. Administration work	1,000 0 0	1,363 13 6
Total ..	19,200 0 0	13,159 7 1

78. The following is a summary of the work done.

(1) Training in Paper Making.—Ten persons were granted scholarships and were trained in paper making at the school of village workers conducted by the All India Village Industries Association at Wardha.

(2) Training in Oil Pressing.—Six candidates were granted stipends and trained during the year in oil-pressing at the All India Village Industries Association's School at Wardha.

(3) Training in Button Making.—The grant under this head was utilised to train seventeen students in the button-making industry during the year.

(4) Training in the Manufacture of Gul from Date-Palm Juice.—A part of the Government grant under this head was spent in giving training in, and encouraging, the manufacture of gul from palm juice at certain selected centres. The remainder of the grant was utilised for starting a Research Centre for detailed investigations connected with the manufacture of sugar and gul from the sweet juice of various types of palm trees.

(5) Training in Coir Industry.—With the Government grant, the Association was able to train 90 women and children in spinning and 12 young men in weaving fancy coir mattings.

(6) Development of Hand-Made Paper Industry.—The Association utilised the grant under this head in carrying out repairs to 5 karkhanas at Erandol and 2 at Junnar. Repairs to platforms of 3 karkhans were also effected at Junnar.

As a result of the above facilities provided, the kharkhanas were able duly to execute a contract for the supply to the Superintendent, Government Printing and Stationery, of hand-made blotting paper and white paper worth Rs. 10,589-4-0.

(7) Publication of Leaflets.—With the help of the Government grant the Association published the following brochures during the year :—

(1) "Ahar Mimansa" (Dietetics) by Mr. Balubhai L. Mehta, M.A., LL.B., Gujarati and Kannada renderings.

(2) "Oil pressing" by Mr. Javerbhai Patel, Marathi rendering.

(3) "Coir Industry" by Mr. S. K. Kallapur, B.A., LL.B., in Kannada.

79. **Hand-made Paper Demonstration and Training Centre, Poona.**—Government sanctioned a non-recurring grant of Rs. 21,500 and a recurring grant of Rs. 10,140 a year for the opening at Poona of a demonstration and training centre for the manufacture of hand-made paper of a kind superior to the variety produced by the manufacturers of Junnar. Government also allotted a site in the grounds of the Agricultural College for the centre. The buildings required for the centre were completed just before the close of the year. The centre will be in charge of Mr. Joshi, the Paper Expert of the Association.

The expenditure incurred on the centre during the year under report is as under :—

	Rs.	a.	p.
Building account	17,660	8	3
Equipment, laboratory, tools, raw materials, colours, etc. ..	5,390	4	9
T. A., miscellaneous expenses, stationery, etc.	433	12	3
Honorarium to the Paper Expert ..	500	0	0
	23,984	9	3

80. **Production-cum-Demonstration Centre for Village Industries.**—A grant of Rs. 2,500 and interest free loan of Rs. 10,000 were sanctioned for the opening of a village industries production-cum-demonstration centre in the Bombay Suburban District. The centre was opened in the month of July at Gondowli near Andheri in the Bombay Suburban District, and was worked by the Gandhi Seva Sena, under the direction of Mrs. Goshiben Captain, a member of the All-India Village Industries Association.

The main idea was to develop the Production-cum-Demonstration Centre into a proper village industries centre, planned on the type of

the centre established at Wardha by the All-India Village Industries Association. During the year, however, the centre concentrated its activities on oil pressing, grinding and paddy husking (specially the making of whole rice) as there is a market already existing in Bombay.

The whole grant sanctioned under the scheme was spent at the centre. The loan sanctioned, however, could not be availed of by the Association during the year.

CHAPTER X.

TECHNICAL AND INDUSTRIAL EDUCATION.

81. **Number of Schools.**—The numerical strength of technical and industrial schools in the Province during the year under review was as follows :—

Schools maintained by public and private bodies, aided by the Department	..	30
Government Technical Institutions	..	4
Institutions only recognised by the Department		44
		78

A complete list of these institutions is given in Appendix I to the Report.

THE COMMITTEE OF DIRECTION FOR TECHNICAL AND INDUSTRIAL TRAINING.

(1) During the year under review the personnel of the Committee was enlarged by Government. The present personnel is as shown below :—

(1) Director of Industries—*ex-officio* Chairman.

(2) The Chairman of the V. J. T. Institute—*ex-officio*.

(3) The Director of Public Instruction or his nominee.

(4) The Principal, College of Engineering—*ex-officio*.

(5) The Principal, V. J. T. Institute—*ex-officio*.

(6) and (7) Two nominees of the Board of the V. J. T. Institute.

(8) to (11) Four non-official members connected with industry in the Bombay Province to be appointed by Government, one of whom should be a person actually interested in the welfare of labour.

The Principal of the V. J. T. Institute should be Secretary of the Committee.

The members under items (6) and (7) are Mr. A. S. Trollip and Professor G. R. Paranjpe.

The members under (8) to (11) are Mr. J. K. Mehta, Mr. Abdul Raheman, Mr. B. S. Dabke and Mr. K. K. Desai, M.L.A.

(2) **Inspection.**—The Teaching Inspector of the Committee inspected all the schools recognised by the Department. This was further supplemented by periodical inspection by the Secretary of the Committee, the Deputy Director, the Industrial Engineer while holding the charge of the post of the Deputy Director, and myself.

(3) **Instruction.**—The courses of instruction offered by these schools will be found in Appendix J to this Report.

(4) **Examination.**—Of the 2,275 candidates, who appeared at the annual examinations for 1938-39 held in April 1939, 1,753 or 77 per cent. were successful. Of the above numbers 903 took the final year examinations of the different courses and 676 passed and were awarded certificates.

(5) **Grant-in-aid.**—The total amount expended, on the recommendation of the Committee, by way of recurring grants-in-aid during the year was Rs. 40,676 and non-recurring equipment grants amounted to Rs. 2,985. Particulars of the grants made to the various institutions will be found in Appendix I to this Report.

A recurring *pro forma* grant-in-aid of Rs. 3,339 towards the rent of the chawl occupied by the School was made to the Narsingrao Shivaji Dharamji Industrial Home for the Blind conducted by the Blind Relief Association.

(6) **Recognition.**—During the year the following 10 institutions were granted recognition :—

(1) Mahomed Hajee Saboo Siddik Institution, Bombay.
(2) National Tailoring and Cutting Institute, Hubli.
(3) Mahila Kala Mandir, Bombay.
(4) Ideal Tailor and Cutter Institute, Ahmedabad.
(5) Government Hand Weaving Institute, Poona.
(6) Government Leather Working School, Khar, Bombay.
(7) N. S. D. Industrial Home for the Blind, Bombay.
(8) Poona School and Home for the Blind, Poona.
(9) Institute of Radio Technology, Dadar, Bombay.
(10) National Industrial School, Bombay.

(7) **Miscellaneous.**—Various enquiries in connection with the opening of new technical and industrial classes from parties named below were received.

(1) Godbole's Art Studio, Poona.

(2) The Superintendent, New English School, Poona.

(3) Lokamanya Seva Sangh, Vile Parle.

(4) Thomas Baptista High School, Bassein.

(5) Vedchhi Ashrama Udyoga Shala, Vedchhi.

(6) Shree Panchmahal Prathmik Kelvani, Kalol.

(7) Industrial Settlement School, Mundwa.

(8) Harijan Sevak Sangh, Hubli.

(9) Modern Tailoring and Cutting Institute, Nasik.

(10) Friends of the Depressed Classes, Ahmednagar.

The parties were supplied with relevant information and the question of recognition in the case of some was under consideration.

(8) **Expenditure of the Committee of Direction for Technical and Industrial Training.**—A sum of Rs. 16,075-1-3 was received by the Committee to meet its expenditure under the different heads as follows :—

	Rs.	a.	p.
Establishment	3,000	0	0
Inspection	3,703	9	0
Examination	9,371	8	3
	16,075	1	3

A sum of Rs. 2,549-5-3 was received on account of examination fees, etc. and was credited to Government.

THE VICTORIA JUBILEE TECHNICAL INSTITUTE, BOMBAY.

82. The standard and number of courses offered by this Institute remained the same as mentioned in the last year's report.

Three hundred and twenty-two candidates applied for admission of whom 174 were admitted of which latter 120 belonged to this Province. This manifestly shows that the reputation of this Institute is spreading beyond the confines of the Province.

The results of the final sessional examinations set out below indicate the very satisfactory progress made :—

Course.	Number of students who	
	Appeared.	Passed.
Mechanical Engineering	40	40
Electrical Engineering	43	33
Textile Manufacture	21	21
Technical and Applied Chemistry	11	11
Sanitary Engineering and Plumbing	7	7

During the year 33 out of 69 students of this Institute were successful in the City and Guilds Institute of London examinations.

83. **Miscellaneous Courses.**—The miscellaneous courses offered by the Institute on Saturday mornings in Elementary Mechanical and Electrical Engineering, Cotton Spinning and Weaving, Electrical Wiremen's and Electricians' work and the by-weekly evening classes in Elementary Principles of Radio Communication, maintenance and repair of Radio Instruments etc. continued to be attended by a large number of people employed in the different trades in the city of Bombay.

84. **Expenditure.**—The total expenditure during the year incurred by the Institute amounted to Rs. 2,68,067 of which Rs. 1,25,000 were as usual given by Government as a grant-in-aid.

THE RANCHHODLAL CHHOTALAL TECHNICAL INSTITUTE, AHMEDABAD.

85. **New admissions.**—During the year under review 222 candidates applied for admission in different sections. Out of these 34 turned up for direct admission having passed matriculation examination or higher examination and 88 appeared at the entrance examination. 70 new admissions were made of which 30 were in Mechanical Engineering, 20 in Cotton Weaving and 20 in Cotton Spinning.

The total number of students on the roll on 31st March 1940 was 147.

A number of private scholarships and 6 Government scholarships of Rs. 10 each were awarded as usual to deserving students during the year.

One hundred and twenty students appeared at the annual examination in April 1939, of which 104 passed. Five out of 21 students of this Institute passed the various examinations of the City and Guilds Institute of London.

86. **Wiremen's Classes.**—18 students appeared at the annual examination conducted by the Committee of Direction for Technical and Industrial Training, Bombay, and 10 passed.

87. **Expenditure.**—The total expenditure during the year incurred by the Institute was Rs. 34,249 and the receipts were Rs. 4,248, as detailed in Appendix K.

THE GOVERNMENT TANNING INSTITUTE, KHAR.

88. The second stage of the building was completed during the year under review. The necessary machinery and equipment were ordered out and were installed in the Institute. The whole equipment is now in working order.

Similarly the Chemical Laboratory attached to the Institute was fully equipped during the year.

During the year the students that were admitted in the Artisan Course in August 1938 were examined and they passed out successfully.

Regular Artisan and Advanced courses were started with effect from 16th June 1939. In all 93 candidates applied for admission to the Institute of which 57 were for the Artisan Course and 36 for the Advanced Course. Out of these 15 were admitted to the Artisan Course and 5 to the Advanced Course.

During the period under review 614 hides and 865 skins were purchased and put into work. The total amount spent for these raw hides and skins and tanning material came to Rs. 5,988 and the leather worth Rs. 1,316 was supplied to the Leather Working School and leather worth Rs. 3,453-4-9 was disposed of in the market.

Picking bands and laces of all description, *viz.*, bark-tanned, dry and greased chrome tanned, dry and greased and raw laces were manufactured at the Institute.

Chemical Laboratory.—Experiments were made regarding rate of fermentation of tan liquors made from tanning materials available in the Province. Experiments on the manufacture of glue and hide powder for tanning analysis were made. Experiments were also in progress on chrome tanning from the sodium chromate manufactured in the Industrial Chemist's Laboratory. The results of all these experiments are still awaited.

Students of the Institute were taken to the Western India Tannery, Gold Filled Leather Works, Dharavi, Bombay, National Glue Factory etc., for seeing the actual working condition of the trade.

Scholarships.—Two scholarships in Advanced Course and 10 scholarships in the Artisan Course of the value of Rs. 15 each were awarded to deserving students.

Expenditure.—Total expenditure during the year incurred by the Institute was Rs. 33,579-15-0 and the receipts were Rs. 3,453-4-9 as detailed in Appendix L.

THE GOVERNMENT LEATHER WORKING SCHOOL, KHAR.

89. The second stage of the building of the school was completed during the year.

Admissions.—Nine students who were admitted in February 1939 completed their course in January 1940, but were permitted to stay on at the school to gain more practical knowledge till April 1940 and to take their final examination conducted by the Committee of Direction for Technical and Industrial Training. During the year 10 new students were admitted to the Artisan Course and 5 to the Advanced Course. At the close of the year 21 students were on the roll, out of which 3 appeared for the Advanced Course and 18 for the Artisan Course.

Many distinguished visitors such as ex-premiers of Bombay and Madras Governments, Adviser to His Excellency the Governor for Industries, Members of the Committee of Education of the United Provinces and Bihar visited the School and appreciated the work done in the school.

The school has been recognised by the Committee of Direction for Technical and Industrial Training.

SCHOLARSHIPS.

Nine scholarships for special Artisan Course, ten scholarships for regular Artisan Course and three scholarships for Advanced Course of Rs. 15 each were awarded during the year.

Expenditure.—The total expenditure of the school was Rs. 14,352-12-3 and the receipts were Rs. 1,001-2-3, as detailed in Appendix M.

GOVERNMENT HAND WEAVING INSTITUTE, POONA.

90. A reference in connection with this Institute is invited to paragraph 53, Chapter V of this Report.

APPRENTICE SCHEME.

91. The progress of the Scheme during the year under review and its present position may be gauged from the following statistical summary :—

1939–40 session.

	Bombay.	Ahmedabad.	
1. Number of applications received from candidates seeking admission to the Scheme	249	61	
2. Number permitted to sit for the admission examination	244	57	
3. Number that actually sat for the examination ..	244	57	
4. Total number of apprentices placed in mills and other industrial concerns	102	31	133

	Bombay.		Ahmedabad.	
	Mills.	Workshops	Mills.	Workshops.
5. Distribution of apprentices by mills and workshops	54	48	31	*Nil.*

	Bombay.	Ahmedabad.
6. Number of co-operating establishments—		
Mills	21	28
Workshops	12	*Nil.*
Presses	1	*Nil.*
Chemical firms	2	*Nil.*

Under an agreement with the Government of India, 12 Engineering cadets of the Indian Marine Training Ship " Dufferin " were admitted to the evening classes of the Government Apprentice scheme specially organised for them for theoretical training.

The accompanying table shows the total number of apprentices under training at the close of the year ending March 1940 :—

	Bombay.	Ahmedabad.	
1st session 1939–40	90	28	118
2nd session 1938–39	101	37	138
3rd session 1937–38	125	39	164
		Total ..	420
4th session Dufferin Cadets 1939–40	11		
3rd session Dufferin Cadets 1938–39	12		
2nd session Dufferin Cadets 1937–38	9		
	32		

SCHOLARSHIPS.

(1) **Government Special Scholarships tenable at the Victoria Jubilee Technical Institute, Bombay.**—Out of the 10 scholarships available for award each year to the Intermediate and Backward Classes and Muslims 5 were awarded to the Intermediate Classes and 3 to Muslims and two to the Backward Classes.

(2) **Scholarships in Technical Chemistry.**—The two scholarships awarded in 1938-39 for research work tenable at the Royal Institute of Science, Bombay, were extended for one year more. Two new scholarships were awarded during the year—both tenable at the Royal Institute of Science, Bombay.

(3) **Scholarships in Electrical Engineering.**—The scholarship for practical training in Electrical Engineering awarded in 1938-39 terminated as it was sanctioned for one year only. One new scholarship was awarded during the year under report tenable at the workshop of the Great Indian Peninsula Railway, Bombay.

CHAPTER XI.

MINES AND MINERALS.

92. As usual, the annual statistics of mines and minerals in this Province were collected by this Department from the various District Magistrates and a consolidated return of the same was submitted to Government and Director, Geological Survey of India.

During the year under report, prospecting licenses were granted in 7 cases for limestone and clay and in 3 cases for iron ore. Two prospecting licenses for limestone were also renewed during the year. Mining leases were granted in 2 cases for iron ore and 2 for manganese ore, in addition to the 4 mining leases for manganese ore renewed during the year.

This Department dealt with enquiries received from the public in connection with minerals, their places of occurrence, firms dealing with them and so on. The total number of such enquiries dealt with during the year under report was 75 as against 62 in the last year.

The chromite mine at Ratnagiri did not work during the year under report.

CHAPTER XII.

FISHERIES.

(1) MARINE FISHERIES.

92. **Departmental Launches.**—The year under review saw the completion of six years of the working of the Fisheries Section. The results achieved during this period have exceeded the most sanguine expectations. Each successive year, since 1934, has seen a steady addition to the number of launches working as fish carriers. A new vessel, named " Khaja Hind ", was put into operation during the year. Its length is 56 feet and has a 140 b.h.p. Diesel engine, as compared with the length of 24 feet and 10 b.h.p. engine of the vessel with which the experiment started five years ago. The vessel is owned by Mr. A. H. Thakur, the owner of the " Chandtara " and the " Nooremohamedi ".

The total number of launches now in commission is nine as compared with seven at the end of the last fishing season.

The department's initiative in the construction of the launches has borne rich fruit in so much as its lead stimulated into new channels capital which had so long been reluctant to come forward to invest in unexplored fields. The capital value of the sum now invested by private enterprise in launches only amounts to Rs. 94,500 as compared with Rs. 68,419 representing the sum sanctioned by Government by way of loans for the construction of the first launches. These amounts do not include sums invested in ice factories and cold storage facilities which total Rs. 5,00,000.

The number of vessels built by Government during 1933-38 was four on which a total capital of Rs. 68,419 was invested. All the launches were sold on the instalment basis. The entire cost of these vessels, viz., " Lady Brabourne ", " Sir Frederick Sykes " and " Lady Sykes ", as well as the interest thereon amounting to Rs. 50,187, has been fully recovered by Government. In regard to the remaining vessel, the " Lord Brabourne ", Rs. 13,291 has already been paid by the hirers towards its costs, the balance to be recovered is Rs. 9,774 and by the end of 1941 the vessel, also, will be off Government's hands.

It is a matter of regret to record that Government were reluctantly compelled to exercise their rights under the contract with a party concerned and to take possession of the launches " Sir Frederick Sykes " and " Lady Sykes " which had been sold to it on the hire purchase agreements. Government's action was inevitable and was due to indifference and chronic default of payment of instalments by the hirer.

The launches "Sir Frederick Sykes" and "Lady Sykes" were accordingly sold under Government's orders to Messrs. Jagannath S. Parkar & Co., and the Janjira Fishing Co., for spot cash payment of Rs. 11,000 and Rs. 9,500 respectively. A total sum of Rs. 20,500 was thus realised. To this may be added a sum of Rs. 12,696 which had already been recovered from the original hirer by way of instalments and other dues. Government thus realised a total sum of Rs. 33,196 against the sum of Rs. 25,679 incurred by Government for building the launches. The surplus of Rs. 7,517 includes a sum of Rs. 3,018 on account of interest at 4½ per cent. and a sum of Rs. 884 on account of miscellaneous expenditure incurred by Government on the launches.

93. **Fishing Season and the Fish Brought by the Launches.**—The fishing season, which started in September, was exceptionally brisk, and the volume of fish transported to Bombay eclipsed all previous records. This was due to the larger number of vessels operating. The large quantities of fish brought to Bombay were not accompanied by a corresponding dearth of supply at the fishing villages on the coast, where, on the other hand, the quantity of fish available was so large that the fish curing yards worked at full pressure, and the fishermen had to suspend fishing until the fish of the original catches had been cured and cleared from the yards. The heavy catches also did not cause any gluts on the market, and fishermen were able to secure a fair price for their labour. Prices were, however, generally low and even the poorest had ample supplies. Both the fish curing yards as well as the Bombay and coastal public had an equal share of the fine catches during the season. The catches were so abundant that for sometime Mackerel were available at three for a pice. This was an undoubted boon to the poor people of the coastal districts, whose purchasing power is low and who cannot usually afford to eat such high qualities of fish as Pomfret, Salmon, etc. The launches also brought back full loads and the effect of this and the rapid distribution of fish by bus and railway over wider areas was to be seen in the fact that even suburban market from Sion to Thana and Bandra to Borivli had ample Mackerel for sale, an event unknown in past years.

The fish landed by the four departmental launches was much larger in the current year amounting to 11,95,736 lbs. as against 8,84,700 lbs. in 1938-39. Five private launches brought between them 13,08,743 lbs. of fish. The total quantity of fish brought by the nine launches was 25,04,479 lbs. About 17,700 lbs. of fish frozen at Malwan was brought to Bombay by steamer. This quantity is insignificant when compared with the 1,08,000 lbs. of frozen fish brought from Malwan by steamer in 1938-39. This reduction was in large measure due to the temporary cessation,

during the busy fishing season, of steamer traffic to Malwan on account of the war. The Bombay Steam Navigation Co.'s steamers imported 30,600 lbs. of fresh fish from Karachi.

Statistics of quantity and types of fish brought by the launches are set out in appendix N.

An experiment of unusual significance was the transport of fish for sale from Karwar to Malwan and Deogad, themselves flourishing fishing centres. It had been apprehended that in view of the plentiful supplies at the latter places, fish from Karwar would not be in demand. This apprehension proved, however, to be ungrounded as 80,000 Mackere transported by the "Lady Brabourne" from Karwar to Malwan and 15,000 by the "Sir Frederick Sykes" from Karwar to Deogad, were readily disposed of. This would seem to show that great urban centres like Bombay are not the only markets for fresh fish but that even thriving centres for the supply of fish on the coast are themselves potential markets for the consumption of fish whenever their own supplies are inadequate or run short.

94. **Fish Landing Sites.**—A great difficulty in the development of Bombay's fisheries has been the lack of an up-to-date fish landing site. This difficulty has been referred to in the previous reports of this Department. The traffic in sand and bricks is so heavy at Sassoon Dock that the launches and other fishing boats cannot always get alongside the dock walls, with the result that the expeditious unloading of fish is hampered. This difficulty is being annually intensified on account of the increasing number of launches and the consequential larger supply of fish brought by them to Bombay.

The question of the acquisition of land in the Gun Carriage Basin area for the exclusive use of the fish trade, with modern facilities for landing of fish, still forms the subject of negotiation between the Port Trust and the Government of India.

95. **Apprentices.**—The scheme to train apprentices so as to enable them to handle and operate the launches made further progress during the year. The total number of apprentices who obtained certificates from the Mercantile Marine Department is four. The number of youths who received training during the year is eight. Four youths serving on privately owned vessels also successfully appeared for the examination held by the Mercantile Marine Department.

The keeness of fishermen to enter fresh avenues of employment is evinced by the example of a fisherman from Bilimora. He apprenticed himself on one of the Department's launches with the object of qualifying eventually for the certificate of a tindal of the Indian Mercantile Marine Department. He was not deterred by the succession of four failures and passed the examination at the fifth attempt. It may be noted that

although the Department has no scheme for the apprenticeship and training of tindals, this is the first instance of a tindal so qualified under the ægis of this Department.

96. **Cold Storage Facilities.**—The cold storage plant installed in the previous year by the Bombay Coastal and Refrigerating Company at Sassoon Dock has proved an unqualified boon to the traders there. The fishermen made such full use of the facilities provided, that the cold storage space was discovered to be inadequate to meet the requirements of the trade and that an additional chamber had to be insulated to meet the demands of the fishermen for space.

Equal advantage was taken by the fish trade of the cold storage plant installed at Saboo Siddick Road behind the Crawford Market, Bombay.

97. **Game Fishing in India.**—The possibility of attracting to India tourists interested in the hunt for Sword fish and Sail fish was investigated by this Department in co-operation with Mr. H. B. Hayes of the American Express Co., who is the Secretary of the Angling Association. Hunting for Sword fish and Sail fish is a popular sport in New Zealand which annually attracts numerous tourists from America. The Angling Association wanted to determine whether there was any propsect of this sport round about Bombay for the benefit of American tourists visiting the city. This Department permitted members of the Angling Association to use the launches to establish the occurrence of these fishes on our coast. Their observations show that the fishes were of common occurrence along our coast. This observation was also confirmed by the experience of this Department, which kept a record of such fishes entangled in fishermen's nets and landed at Sassoon Dock. Their number landed at Sassoon Dock in about two months was 24. Apart from this, records kept at the fish-curing yards by the staff showed that both the Sword fish and the Sail fish were to be met with fairly frequently.

SCHEMES SUBMITTED TO GOVERNMENT.

98. The following schemes were submitted to Government :—

(1) *Need for improved fishing methods.*—The department, realising that the development and prosperity of the fishing industry depended on other factors than the mere popularisation of launches for the transport of fish, submitted a scheme for the improvement of fishing methods. This scheme received administrative approval and might have been implemented but for the outbreak of the war on account of which Government have postponed it.

(2) *Marine aquarium.*—The establishment of a Marine Biological Station has frequently been stressed in the press for a number of years. The problem was brought to the forefront in a Council question put by Mr. S. H. Prater, M.L.A., and in an address presented by the

fishermen at Danda to Mr. B. G. Kher on the occasion of a visit by him to their village during his term as Prime Minister. The problem was investigated afresh by the Fisheries Officer and a scheme, based on the plans obtained from the Director of Fisheries, Madras, was duly forwarded to Government. The scheme was not sanctioned on account of financial stringency.

(3) *Fisheries Schools.*—Proposals for the establishment of two fisheries schools, one at Malwan in the Ratnagiri District and the other at Karwar in the Kanara District, were submitted to Government during the year for consideration. It was, however, not possible for Government to make any provision for the scheme in the budget estimates for the year 1940-41.

(4) A scheme for the apprenticeship and training of youths of the fishing community as Tindals (Captains) on Government launches was forwarded to Government, but was not sanctioned on account of financial stringency.

(5) A scheme to determine the food values of more important fishes of our province was submitted to Government, but was not favourably considered.

99. **Fisheries Information Bureau.**—The Bureau continued to fulfill its useful existence. It attended to numerous inquiries relating to a variety of subjects during the year. Some idea of the nature of the inquiries attended to by the Bureau during the year may be gleaned from the following.

Information relating to feeding and growth of various commercial fresh water fishes, with which the Department had experimented, was supplied to Dr. C. Ricardo at Cambridge University and to Dr. S. L. Hora of the Indian Museum, Calcutta.

Inquiries were also received from, among others, the Aviation Department of Messrs. Tata Sons, Ltd., who were interested in determining the prospects for the aerial transport of fish from the coastal ports to Bombay and from Bombay to places in the interior. Detailed information on the subject was supplied to the Company.

Information in connection with the launches of this Department was supplied to the Director of Industries, Sind, Karachi, the Director of Industries, Travancore, and to the Chief Marketing Officer, Bombay Province.

The fishermen of Deogad had for a long time a grievance against an order by the Port authorities, restricting the use of the rampan net in the Deogad Bay. This grievance formed the subject of a representation submitted by them to Government. The Fisheries Officer of this Department was directed to investigate the matter. He accordingly

visited Deogad and after minute inquiries on the spot and after consulting the Collector of the Ratnagiri District submitted a report to Government. The recommendations contained in the report were, however, not accepted by Government.

Dr. S. B. Setna Fisheries Officer published a paper, during the year, on Marine Fisheries of the Province of Bombay in the Journal of the Bombay Natural History Society. The paper surveys the experience of the past five years, records the difficulties that have been encountered and indicates appropriate lines on which our fishing industry should be developed if it is to flourish and prosper in the future.

(2) FRESH WATER FISHERIES.

100. The development of fresh water fisheries engaged the attention of this department during the year. The scheme was not extended to new areas, but surveys were continued with a view to the extension of the experiment when circumstances permitted. The original scheme was sanctioned for four years. This period was completed during the year under review, and a report embodying the results of the four years, and progress of the experiment was under preparation. The report contains proposals for enlargement of the scope of the scheme by the establishment of a fish farm at Khopoli, so that there may be available within easy reach of Bombay a centre where experiments may be carried out.

The upkeep of a farm, however, presents many problems, which, apart from expenditure, include provision of ponds, arrangements for unfailing supply of water, installation of an engine to pump water into the ponds, and the engagement of a mechanic. Experience shows that such places in India as have fish farms are not sufficiently paying and invariably run at a loss. A scheme free from some of the attendant problems mentioned above is under preparation. The site for the proposed scheme is adjacent to the tail race at Khopoli, where the chief advantage will be that both land and water will be obtained gratis. The Department is confident that the farm will eventually prove to be a success.

The report also envisages the extension of the experiment to new sites.

101. **Fish Fattening Experiment.**—A consignment of 10,000 carp fry was obtained from Patna. These were liberated on the same day into tanks at Bandra, Pali Hill, Kurla, Mahim and Thana. The first three tanks have been netted with the following results.

A total of about 700 fry from one container was liberated in the small Bandra tank on August 7, 1939. The tank, which has a water spread of about 1½ acres, was dragged on February 16, 1940, when about 400 adult specimens of Rohu and Mirgal were recovered. The sale of these realised about Rs. 60.

The tank on Pali Hill, which has a water spread of 2 acres and into which about 700 fry were introduced, was dragged on May 15, 1940, when 540 adult fish were recovered. Their sale yielded Rs. 91.

The tank at Kurla was dragged on May 18, 1940, the number of fish netted being 770 and the amount derived from their sale being Rs. 321. This has a water spread of about 4 acres and 1,200 fry were introduced into it.

The disposal of the fishing rights in the pond at Thana, which also had been stocked by this Department with 1,200 fry on the same day as the other ponds, fetched Rs. 155.

The aggregate amount realised from the four ponds mentioned above is Rs. 627 as against Rs. 21-12-0 the actual cost of the fry and Rs. 141-10-0 the cost of the entire consignment (including the fry) ordered from Patna. To this sum has to be added the amount to be derived from the sale of the fish in the Mahim pond which has not yet been fished. The amount realised from the sale of the grown up specimens in our tanks thus supports the view that there is a promising future for our fresh water fisheries.

Gourami.—Gourami brought from Madras in April, 1937, and introduced in the Bandra pond have grown to about 20 inches. Definite evidence of their breeding was established by this Department during last year. Several nests built by the fish out of fibres of the stalks of the lotus plant were noticed, during the current year, along the sides of the pond.

A fact of some importance observed by this Department was the number of eggs laid in a single nest. These were found to total about 3,000 as compared with an average of 800 eggs observed in nests in the Philippines and 500 fry in Madras. The observation seems to support the presumption that the conditions in this pond are better suited to the cultivation of the Gourami than elsewhere. One such nest containing the larvæ was kept in an aquarium. Attempts are being made by artificial feeding of the larvæ to grow them into infant Gourami. If this experiment is successful, it will be of great benefit to inland pisciculture and exercise an important bearing on the successful establishment of a Gourami farm. The great advantage of development of eggs under controlled conditions in a laboratory will be that the fear of their being devoured in their larval stages will be eliminated as a large number of fry are now devoured by other fish during their helpless period of existence. The prospects of an increase in the numbers of Gourami in any pond will be immeasurably increased if the fry are liberated after they have emerged from their larval stages and have assumed definite adult characteristics. They will then be able to take care of themselves with greater hopes of survival.

Etroplus.—Etroplus is now breeding successfully in a well at Vile Parle. Immediately after the monsoon about 200 fingerlings bred in the Vile Parle well were liberated in the Mahim-Kurla creek. The fish being originally from brakish water should be able to establish itself in this creek where abundant food is available. The stocking of this creek will be continued with a view to the establishment of a source of supply of etroplus fingerlings near at hand.

Eighty fingerlings from the Vile Parle well, measuring 2 inches in length, were introduced in a tank at Sion in December, 1938. The fingerlings have evidently grown and bred, as several baby fish were observed near the steps of the tank in January, 1940. Etroplus obtained from the wells at Sion and Vile Parle are being introduced in other suitable wells in the interior.

Murrel.—The growth of Murrel was not on the same satisfactory scale as recorded in last year's report. Two hundred and fifty Murrel fingerlings obtained from the rivers near Poona in May 1939 were introduced in the same tank as was used for stocking Murrel in the previous year, in July 1939. The pond was dragged after 7 months in February 1940. Their growth was scanty and their size dimunitive. The only explanation of this unsatisfactory growth is that no Megalops fingerlings were introduced together with the Murrel as in the previous year, when the Megalops must undoubtedly have served as food for the Murrels. The observation shows that the successful and paying cultivation of Murrel depends largely on natural live food, as has been conclusively established by the investigations of the Madras Fisheries Department. The hopes expressed last year of a bright future from the cultivation of Murrel were unfortunately not realised during the year.

102. **Stocking of Lakes.**—Steps to introduce Catla, Calbasu, Mirgal and Rohu near Bombay, have been taken by this Department. The Pawai lake was stocked in July 1937 with about 8,000 fry of these fishes, which were specially imported from Patna and Madras. The stocking of Tata Hydro Electric group of lakes (Shirota, Walwan and Andhra) was carried out in July 1939 at the expense of Messrs. Tata Sons Ltd. The aggregate number of fry and the fingerlings liberated in these lakes was over 10,000. The results of these stocking operations will not be immediately obtainable but their value for the future is undoubted. A nucleus of supply of fish have been cultivated in our waters where they were unknown previously.

OTHER TECHNICAL WORK.

103. The observations of the peculiar characteristics and habits of Megalops, specially its tendency to devour cyclops, the host that is the carrier of the Guinea Worm pest, formed the subject of a joint paper

published by Dr. S. B. Setna, the Fisheries Officer and Mr. C. V. Kulkarni, the Piscicultural Assistant in the Journal of the Bombay Natural History Society.

A hitherto unrecorded brakish water fish was noted by this Department. Specimens of this fish were forwarded to America to two experts for opinion. Both these experts acclaim the value of the find. Both experts unanimously, though independently, declare that the fish is, to quote their own words " a discovery of the century." The systematic position, structural modifications, bionomics and development of this fish were worked out by the Piscicultural Assistant and the results of the researches were published in the records of the Indian Museum, Calcutta.

(3) FISH CURING YARDS.

104. A brief account of the work of the Fish Curing Yards is given below :—

1. **Number of Yards.**—The number of fish curing yards at which business was conducted during the year 1939–40 was the same as last year, viz. 32, 18 in the Ratnagiri District and 14 in the N. Kanara District. Out of these, 11 are conducted on a 12-monthly basis, 15 on 9-monthly basis and the remaining six are petty yards in charge of Petty Yard Officers.

2. **Fish Cured at the Yards.**—The principal kinds of fish brought to the yards for curing were Mackerel (Bangada), Cat Fish (Shingala), Sharks (Musi and Mori etc.), Dhodi, Ghol, Surmai and Karmat.

The prices of fresh and salted fish as well as those of beach-dried manure were generally low.

The season, which was extremely brisk throughout, started in September. The catches were unusully heavy, totally unlike any in the previous five years. All records in regard to the sales of salt at the fish curing yards were eclipsed during the period under review, when the amount realised amounted to Rs. 96,400. The amount would have been yet higher if the fish brought to the yards were to be added to the fish transported to Bombay by the launches and steamers.

Moreover a large quantity of fish, which might normally have in earlier times found its way to the fish curing yards, was carried away by bus to meet the demand of the people in the interior. The diversion of the fish from the yards to Bombay and elsewhere for consumption further resulted in the deprivation of a sum of at least Rs. 10,000 to the fish curing yards. Salt of this value would most certainly have been sold at the fish curing yards if the fish had to be brought there to be cured.

Mithbao Yard.—This yard which was run on nine-monthly basis did not show good sales of salt. It was, therefore, converted to a petty yard with the approval of Government with effect from September 1, 1939.

Bingi Yard.—The busiest yard during the year was the one at Bingi. Endowed by nature with a deep inshore and a long line of islands that front the coast., Bingi port offers fine protection to shoaling fish. Several rampans worked day and night and the yard recorded the highest sales of salt. Fishing had to be suspended for some time on account of insufficient space in the yard compound. At the instance of the Inspector of Fisheries, the fishermen and fish curers of Bingi purchased four gunthas of land adjoining the yard compound and handed over this additional land to the Department for extension of the yard compound.

3. **Use of salt earth.**—As stated in last year's report, the fishermen at Kalbadevi, Purnagad, Mumbri, Achra, Talasil, Deobag and Kochra in the Ratnagiri District and Majali, Kodar, Keni, Gangawali, Kumta, Manki, Murdeshwar and Shirali in the Kanara District, used salt-earth on an extensive scale to cure fish despite ceaseless propaganda by the Inspector of Fisheries against its use. The fishermen of Mithbao however, dis-continued the use of salt-earth and the sales of salt at the Mithbao yard increased to 1,134 maunds 20 seers as against 289 maunds in the previous year.

4. **Duty Free Salt Issued.**—During the year a total quantity of 331,673 maunds of fresh fish was brought to the yards, 91,416 maunds of salt was issued for curing fish, 48,346 maunds being issued to the yards in the Ratnagiri District and 43,070 maunds to the yards in the Kanara District, as against a total quantity of 62,964 maunds issued last year in both the Districts. The quantity of cured fish removed from the yards was 249,825 maunds.

50,151 maunds of salt were indented from Uran for the yards in the Ratnagiri District and 45,187 maunds from Sanikatta for the yards in the Kanara District.

The stock of salt at the 32 yards at the beginning of the year was 53,910 maunds and at the close 53,160 maunds.

Some fishermen of Boria, Jaygad, Kalbadevi, Ratnagiri, Manki and Murdeshwar availed themselves of the concession of taking duty free salt from their respective fish curing yards to preserve their catch at sea. The quantity of salt issued for this purpose was 888 maunds, 841 maunds in the Ratnagiri District as against 1,025 maunds in the previous year.

5. **Model Fish Curing Sheds.**—The model fish curing sheds constructed at Malwan and Majali in the Ratnagiri and Kanara Districts

respectively, in the previous year, were thrown open for use during the period under review.

The sheds have cement washable floors, the sides of the structure being of latticed teak work instead of walls, so as to ensure better light, ventilation and circulation of air. Fish is salted on the cemented floor and kept in the tanks for curing. The filthy brine is led through the gutter to cess pits connected with the sea.

Two experienced master fishermen from Madras were appointed as master curers with effect from October 1, 1939, and were posted at the Malwan and Majali yards. Two youths from the local fishermen's community were also appointed to assist the master curers.

Both the model-sheds have proved to be a great advantage to the fishermen, who, realising that they are a great boon, have been quick and eager to use them. The fish treated at the sheds retains its original whiteness of colour. (Statement of accounts attached *vide* appendix O.)

Another factor that must weigh with the fishermen is the economic cost of curing fish, as small quantities of salt are used, the fish being cured in brine contained in cement concrete tanks.

Fish cured at the Majali shed was an excellent product and yielded twice as much at the auction, as fish cured by the usual methods. The better price realised induced the traders to buy up the entire quantities of fish treated at the sheds. The excellence of the fish is undoubted and attempts are now being made by this Department to gauge the prospects of its sale in the Bombay and Ceylon markets.

The fishermen have now come to realise the advantages of pucca structures with cement concrete platforms. These structures, the fishermen admit, would most excellently meet the requirements of their trade, but are beyond their resources on account of their poverty. Fish curers from Malwan, Majali, Chendia and Harwada have approached the Department with a request that similar but smaller structures should be put up at their yards at Government's cost and they agree to bear the extra charge of two annas on every maund of salt sold to them as was done at Karwar (Baitkhol), until Government's entire outlay is recovered. The subsequent maintenance of the sheds is to be borne by Government. The petitions are being considered by the Department.

Karwar (Baitkhol) Yard.—Six cement concrete platforms at the Karwar (Baitkhol) yard, which were reported to be under construction last year, were completed during the year under review, when they were thrown open for use to the fish curers. The platforms soon established themselves in popularity with the fishermen, who clamoured for the construction of a second set.

Government's outlay of Rs. 1,094 on the first set was completely recovered by the levy of an extra charge of two annas on every maund of salt sold to the fish-curers. Six more platforms at a cost of Rs. 1,136 were constructed during the year. The cost of the second set is being recovered in an identical manner. The amount, hitherto, recovered by Government in respect of the second set is Rs. 347-14-0.

105. **Glazed Pots for Curing Fish.**—At several yards in this Province fish-curers use bamboo mats, baskets and old wooden tonies for curing fish. With a view to introduce a better type of curing receptacle, an order for six stoneware and salt glazed jars, each with a capacity of 16 gallons, was placed with the "Standard Pottery Works, Ltd., Alwaye (Travancore), India, in January 1940. The jars were received by the end of January. It was, therefore, not possible to make use of them during the fishing season.

A great drawback of many of the yards is the unsatisfactory approach to them. The roads are more often than not merely beaten tracts. This inconvenience of approach to the yards has always formed a subject of grievance among the fishermen. It is, therefore, gratifiying to record that the handicaps felt on this account by the fish-curers and traders at Karwar (Baitkhol) have been removed by the provision of a good road to the yard by the Karwar Municipality which has also installed lights along the roadway. This Department is grateful to the Municipality for relaying the roadway as it is a welcome boon to the fishermen, who are thus able to approach the yard without any difficulty at all hours.

106. **Offences.**—A twelve-monthly clerk at one of the yards in the Ratnagiri District was found guilty of breach of discipline and his increment for one month was stopped.

107. **Co-operative Societies.**—A co-operative society for the benefit of the yard staff, under the Chairmanship of the Fisheries Inspector and known as the Fish-curing Yard Establishment Co-operative Society Ltd., Malwan, was registered in August 1939. The Society was established with an initial capital of Rs. 300. At the close of the year there were 90 members on the rolls of the Society, the amount subscribed was Rs. 937-8-0 with an aggregate loan of Rs. 795 to 9 members.

The Fisheries Inspector also continued to render assistance to the Registrar of Co-operative Societies in the latter's work to popularise the establishment of fishermen's Co-operative Societies in rural tracts.

108. **Inspection.**—The Fisheries Inspector continued to attend to his usual round of duties. The chief of these consisted in propaganda among the fishermen in order to induce them to introduce changes which would ensure a larger turnover in their trade. He also impressed on

them the manifold advantages of the formation of Co-operative Societies. The fishermen were, as usual, inclined to treat his efforts with indifference. This makes it unmistakably clear that the cause of the advancement of the fishermen's prospects is linked up with the problem of their literacy. Their prime need is education, so that they may evaluate in a more correct perspective the advantages of the various efforts being made by this Department for their improvement.

The Fisheries Inspector was out on tour at the yards for 132 days. On his visits to the yards he addressed several meetings of fishermen and fish-curers, and discussed with them difficulties hampering the development of their trade.

109. **Yard finances.**—Appendix P gives a *pro forma* account of the transactions at the various fish-curing yards during the year ended March 31, 1940.

Appendix Q contains a detailed account of the transactions.

The estimate for the administration of the fish-curing yards for the year had reckoned on a possible sale of 70,000 maunds, but the quantity actually sold was 91,416 maunds.

The enhanced sale of salt was due to the unusually brisk fishing season already referred to elsewhere in the report.

The net profit from the working of the yards during the period under review was Rs. 15,824.

The financial position has been obviously satisfactory. The details of the revenue realised during the past four years, since the transfer of the yards to this Department, are given hereunder :—

Year.	Profit.	Loss.
	Rs. a. p.	Rs. a. p.
1936-37	7,945 0 0	....
1937-38	....	4,620 0 0*
1938-39	....	5,379 0 0
1939-40	15,824 0 0	....
Total ..	23,769 0 0	9,999 0 0

Net surplus over four years' transactions equals Rs. 13,770.

The issue price of salt to fish-curers was raised from Re. 1 to Re. 1-1-0 per maund with effect from October 1, 1939, in view of the higher rate paid by this Department to Sir Dossabhoy Hormusji Bhiwandiwalla, consequent on the increase in prices in commodities brought about by the war.

* The amount of loss for 1937-38 which was set down at Rs. 4,912 (*vide* para. 163 of the Annual Report for that year) has been corrected to Rs. 4,620 on the advice of the Accountant General.

CHAPTER XIII.

WEIGHTS AND MEASURES SECTION.

110. The Bombay Weights and Measures Act, 1932, was satisfactorily enforced throughout the Province by Government inspecting units in co-operation with Local Body inspecting units and the work of verification and re-verification and stamping together with inspection and surprise visits progressed smoothly.

In order to enable the traders, dealers in and manufacturers of weights and measures to benefit from the impending reduction in the scale of fees, the work of verification and stamping was temporarily suspended from 1st August 1939 in Bombay city and eight Districts, viz. Bombay Suburbs, Thana, Poona, Satara, Belgaum, Ahmednagar, Broach and Panch Mahals and Surat and the remaining Districts of the Province from 20th October 1939. The work was resumed on 1st December 1939 and the revised scale of fees for verification and stamping was charged, reduction being to the extent of about 33 per cent.

111. **Act and Rules.**—During the year under report, the following proposals and amendments were made :—

(*a*) As per assurance given to the public by Government from time to time, the scale of verification and stamping fees was revised and reduced fees to the extent of about 33 per cent. were brought into force from 1st December 1939.

(*b*) Proposals for exemption of certain classes of weights or measures, weighing or measuring instruments whether used or intended to be used for purposes other than trade were submitted to Government and these proposals are under the consideration of Government.

(*c*) With a view to achieve uniformity and efficiency in the enforcement of the Act, it was proposed to amalgamate the Local Body inspecting units and Government inspecting units. This proposal is at present under the consideration of Government.

112. **Equipment.**—During the current year, Inspectors were supplied with an additional set of working standards for verification of bullion tola and apothecaries' weights, etc.

113. **Prosecution.**—About 500 cases were put up by Inspectors to this office for necessary sanction to prosecute the offenders under various sections of the Act. Out of these 150 cases were duly selected and sanctioned for prosecution paying particular attention to the type, gravity

and frequency of offence, evidence available for successful prosecution, etc. Convictions were obtained in 106 cases, and in 9 cases the offenders were acquitted being given the benefit of doubt. The rest of the cases remained pending for trial in courts.

114. **General—(*a*) Fraudulent stamping and short-reeling.**—The Director of Industries was authorised by Government to institute prosecutions under the Indian Merchandise Marks Act against offenders contravening the provisions of the said Act in regard to fraudulent stamping of cotton piece-goods and short-reeling of yarn. Three cases for prosecution against offending mills were under consideration of the Department.

(*b*) **Trade customs.**—There existed in this Province certain established customs in trade whereby the wholesale merchants when purchasing agricultural produce make certain deductions from actual weights or measurements. This practice left scope for unscrupulous traders to exploit agriculturists who on account of prevailing illiteracy and lack of co-operation, etc., amongst themselves are unable to put up united fight against the buyers for stopping such practices. Government accordingly issued a Press Note dated 17th April 1939 with a view to discourage these practices in trade and advising traders to make deductions in rates rather than in weights or measurements.

(*c*) **Unauthorised and wrong denominations.**—In some Districts especially in Kolaba, Thana and Ratnagiri Districts, the use of an old and unauthorised dry measure called "Phara" for measuring paddy was current. A vigorous propaganda was accordingly carried out for transacting business only on the basis of recognised weights and measures and standard denominations recognised under the Act. The Inspectors, in this connection, visited various traders in different parts of the districts and explained to them personally as also through distribution of leaflets, by announcements through village criers and in some cases through meetings convened with the assistance of revenue officials. As a result of this, the situation has been greatly improved and strict watch on the traders in this respect is being kept by various Inspectors in the Districts.

(*d*) **Other Provinces and Indian States.**—Two candidates from the Janjira State and the Amritsar Municipal Committee were given training for the duties of the post of Inspector of Weights and Measures for a period of two months. As reported previously, this Department continued to test the working standards belonging to some local bodies in the Central Provinces as per arrangements made by the Central Provinces Government with the Bombay Government.

(e) **Officers' tours.**—During the year, the Warden and the two Assistant Wardens paid regular inspection visits to the various Districts, covering practically each District twice.

115. **Expenditure.**—The expenditure in connection with the enforcement of the Act during the financial year 1939-40, and the two preceding years was as follows :—

Year.	Recurring and non-recurring expenditure incurred by	
	Government.	Local Bodies.
	Rs.	Rs.
1937-38	1,56,818	83,364
1938-39	1,59,031	87,097
1939-40	1,70,439	Not available yet.

116. **Receipts.**—The receipts credited to Government on account of verification and stamping work carried out by Government Inspectors and the receipts of local bodies under the Act during the year and the two previous years were as under :—

Year.	Government receipts.	Local Bodies receipt.
	Rs.	Rs.
1937-38	3,43,643	68,598
1938-39	3,71,054	1,23,481
1939-40	2,91,841	Not available yet.

The income for the above years in both the cases was realised on the basis of fees prescribed in the year 1937. The fees have now been reduced by about 33 per cent. with effect from 1st December 1939, and the income for the year under report is low in comparison with the previous years on account of reduction of fees and suspension of verification and stamping work for sometime.

CHAPTER XIV.

WORK OF THE DEPARTMENT—MISCELLANEOUS.

117. This Department as usual did considerable amount of miscellaneous work not included in any of the foregoing chapters, a brief account of which is given below :—

(1) WORK FOR OTHER DEPARTMENTS OF GOVERNMENT.

118. (1) The Yeravda Prison was given advice regarding machines for spray painting of furniture. A dyeing demonstrator of this Department also demonstrated spray printing on cloth to the convicts of the Prison to adopt the new processes in their work.

(2) The Yeravda Prison was also helped in training the convicts in carding and spinning of wool by a demonstrator.

(3) The Wool Expert assisted the Belgaum Prison in the manufacture of different types of blankets to required standard.

(4) The Arthur Road Prison was advised on the question of suitable Jute Yarn for manufacturing gunny cloth.

(5) Experiments were made in the Industrial Chemist's Laboratory regarding the manufacture of ink powder for the office of the Superintendent, District Thana Prison and all the detailed information was supplied to that office.

(6) A test of Ceylon sand and manufacture of coloured glass was taken by the Industrial Workshop of this Department and a report was furnished as desired by Government to the Ceylon Trade Commissioner for India in Bombay.

(7) In connection with a scheme for organising a wool spinning and weaving training class at the sheep breeding farm, Poona, the Live Stock Expert, Bombay was assisted in securing a suitable instructor who was further trained for the work at the wool weaving demonstration of this Department.

(8) Necessary advice was given in a case where the Stationery Department and the Jail Department differed on the question of rate of pugrees and gunny cloth to be supplied by the latter to the former. Tests were also carried out on samples of Khadi for the Stationery Department.

(9) The Inspector General of Prisons complained regarding yarn supplied by firms. A test of the samples was taken and report of results was furnished to the Inspector General of Prisons.

(10) The dispute between the Backward Class Officer, Bombay Province, Poona and Surgeon General with Government regarding the supply of bed

sheets and pillow cases manufactured by the Criminal Tribes Settlement to the different hospitals of the Province was considered and necessary specifications were furnished and advice was rendered.

(11) The Commissioner of Excise was assisted with regard to purchase of card board boxes for packing bhang and opium for sale to addicts.

(12) The Commissioner of Excise was assisted with regard to the purchase of clothing for the Excise constabulory from the Jail Department. Report was also furnished to the Inspector General of Prisons regarding manufactue of chappals to meet the requirements of the Commissioner of Police, Bombay.

(13) Advice was given to the Labour Welfare Officer regarding scheme for soft toys to be introduced, as part-time work for women.

(14) Detailed advice was given to a representative of the G. I. P. Rly., Goods Department with regard to the classification of fibrous plaster casts.

(15) The Provincial Marketing Officer, Bombay Province, Poona, was furnished with a detailed note on " the development of fibre resources of the Bombay Province ".

(16) As usual a surprise check of the stationery articles in stock at the Stationery Department was made and a report submitted to Government and the Superintendent in this connection.

(17) Experiments were made on stationery articles such as typewriter oil, gums, ink powder, writing inks etc. sent by the Superintendent, Government Printing and Stationery, Bombay, and a test report was furnished to that officer in respect of all articles sent by him from time to time.

(2) CONFERENCES, COMMITTEES, ETC.

119. **Industrial Research Council.**—The fifth session of the Industrial Research Council was held at Calcutta on the 7th and 8th August 1939. Mr. D. C. Gupta, who was then acting as the Director of Industries, attended the session as the official representative along with Mr. B. S. Dabke, who was nominated by Government as non-official member to attend the session.

120 **Industries Conference.**—The Eleventh Industries Conference was held in Mysore on 15th and 16th December 1939. Mr. Advani attended as the only representative of the Government of Bombay. The conference examined, among other matters, the question of War and the Industrial situation in India particularly with reference to the shortage of dyes and other materials and the question of the development of minor industries and compilation of industrial statistics.

121. **Cottage and other Small Scale Woollen Industries Committee.**—This Committee also met in Mysore on 18th December 1939, and was attended by Mr. Advani, as the representative of the Government of Bombay. The Committee decided to recommend to the Government of India to make to the Provinces, annual recurring grants, on the same basis as in the previous years. The Committee also considered and approved the extension and expansion of the Scheme submitted by this Department.

122. **The Bombay Economic and Industrial Survey Committee**—The Committee referred to under last year's report continued its labours during the year under report. Mr. Gupta acted as the ex-officio member of the Committee during the absence of Mr. Advani from July to October. Seventeen meetings of the Committee were held during the year under report, the last meeting was held on 25th November 1939. The Secretary of the Committee, however, continued to function till the end of the year, in connection with Volume II of the Report. Volume I of the Report was submitted to Government at the end of March 1940 and Volume II was submitted later.

123. **Report on Scientific and Industrial Research, 1939-40.**—A list of industrial and scientific researches completed in progress or abandoned during the year in the various educational and scientific institutions in the Province was compiled in prescribed forms and transmitted to the Director, Industrial Research Bureau, New Delhi. The list was obtained from the institutes concerned.

(3) EXHIBITIONS.

124. It is the policy of this Department to participate in the industrial and agricultural shows held in the Province and elsewhere.

A brief account of the activities of this Department in this respect in connection with the principal shows is given below :—

(*1*) *Ahmedabad District Rural Development Board's Cottage Industries show at Vautha held in November 1939.*—Practical demonstration in hand weaving by improved appliances was organised at the show.

(*2*) *Bombay Provincial Women's Council Home Industries Exhibition held in November 1939.*—Stalls were organised for the display of handloom fabrics, art-crafts products, leather goods, shoe laces, file strings, banding cords and coir articles produced by the different institutions of the Department which were appreciated by the visitors from the view point of workmanship and patterns meeting changing taste of the public. Exhibits from Tanning and Leather Working School were also shown at this Exhibition.

(3) *All India Khadi and Swadeshi Exhibition held in Madras in December 1939.*—Practical demonstrations in improved methods of (*a*) carding, spinning, dyeing and weaving of wool, (*b*) tanning, dyeing and finishing of leather, (*c*) manufacturing lacquer ware of different up-to-date designs and colour schemes, and (*d*) production of cane and bamboo articles of household utility were organised at this Exhibition. In addition, different types of sandal-wood articles, leather goods, handloom fabrics, etc., were displayed to acquaint the visitors with the types of articles produced in the Province by cottage workers while receiving training in the different institutions of this Department. The demonstrations and exhibits were much appreciated. Some articles were also sold. Due to a sudden outbreak of fire several implements and exhibits of the Department were burnt down and the exhibition ended before its closing date.

The Department also brought to the notice of the various commercial bodies exhibitions due to be held in other parts of the Province, India and abroad. Parties desiring to participate in any of them were given all possible information and assistance.

The Department also participated in various activities relating to Village Industries Scheme by deputing its technical staff to various centres as required. Lectures on cottage industries were given by the staff with the aid of special portable implements. The staff toured with the Village Uplift Van for propaganda and held demonstration in the Central Division and Southern Division according to the programmes scheduled by the Collectors.

(4) LIBRARY.

125. During the year 1939-40, 334 new publications were added to the library attached to the Department thus bringing the total number of books, publications, directories, etc., in the library to over 6,464. During the year two new journals viz. "Science and Culture" and "Monthly Circular Japan" were added to the library. The library is open to the general public for reference and it is gratifying to note that full advantage of the facilities available for study and reference is being taken.

The Department's library is also the inspection centre in Bombay for the patent office publications. About 1,666 volumes of these publications, dating back from the year 1920 are available for inspection. On 26 occasions during the year, inspections of the English as well as Indian patent specifications were demanded by members of the public.

CHAPTER XV.

STAFF AND EXPENDITURE.

(1) STAFF.

126. I held the post of the Director of Industries during the year under review except for 4 months from 1st July to 31st October 1939 when I was on deputation out of India. During my absence Mr. D. C. Gupta, Deputy Director of Industries, held charge of the post of the Director of Industries. Mr. D. C. Gupta held charge of the post of the Deputy Director of Industries during the year under review except when he acted for me and when he was on leave from 3rd January to 15th February 1940. Mr. M. E. Haskell, Industrial Engineer, during the year under review held charge of the post of Industrial Engineer. He also held charge of the post of Deputy Director of Industries while I was on deputation and when Mr. Gupta was on leave, in addition to his own duties. Dr. N. R. Damle continued to hold the post of Industrial Chemist. Dr. S. B. Setna continued to hold the post of Fisheries Officer except while he was on leave for 20 days during January 1940. Mr. S. S. Rajagopalan held the post of Personal Assistant till 11th August 1939 and was then appointed Employment Officer, and Mr. S. Y. Anandkar was appointed to officiate in his place. Mr. R. U. Patel was appointed Warden of Weights and Measures vice Mr. T. V. Lalvani; he joined his duties on 1st April 1939 and held the post during the year. During my absence a temporary post of Assistant Industrial Engineer for four months was created and Mr. V. V. Apte, Assistant Warden of Weights and Measures was appointed to hold it.

The following were the more important non-gazetted technical officers appointed during the year:—(1) Sericulturist, (2) Assistant Superintendent of Leather Working School, (3) Two additional chemists in the Industrial Chemist's Laboratory, and (4) Oil Chemist.

Only 6 clerks on temporary basis were sanctioned during the year to meet the very great increase in the pressure of office work owing to the new schemes and organisation of the Industrial Engineer's Workshop and Industrial Chemist's Laboratory.

(2) TOURING.

127. During the year under review the Director and Deputy Director of Industries, Industrial Engineer, Industrial Chemist, Fisheries Officer, Marketing Officer (Handloom Products), Textile Designer, Tanning Expert, Warden and Assistant Wardens of Weights and Measures toured throughout the Province as necessary.

(3) VISITS TO WORKS.

128. The Director, Deputy Director, Industrial Engineer, Industrial Chemist and Tanning Expert visited several concerns in connection with various investigations in hand and for rendering technical advice.

(4) EXPENDITURE.

129. The expenditure incurred by the Department of Industries during the financial year 1939-40 and the four preceding years was as follows :—

	Rs.
1935-36	6,31,903
1936-37	6,20,043
1937-38	7,29,597
1938-39	8,44,768
1939-40	9,92,638

The figures of expenditure given above are exclusive of the expenditure on such activities as the marketing of handloom products and the Woollen Scheme referred to in Chapter VIII. These activities were financed from the funds placed at the disposal of the Government of Bombay by the Government of India and the expenditure under each of these activities during the year under report was as under :—

	Rs.
(1) Marketing of Handloom Products (Cotton) ..	45,081
(2) Woollen Scheme	22,961

The total expenditure on all the activities of the Department for the year 1939-40 was, therefore, Rs. 10,60,680.

The total receipts during the year amounted to Rs. 4,47,386. Out of this sum, Rs. 2,91,841 were realised from the fees collected by the Government Inspectors of Weights and Measures and Rs. 99,882 from Fish Curing Yards. Receipts on account of the other activities of the Department amounted to Rs. 55,663.

(5) CONCLUSION.

130. The various new schemes undertaken by the Department added very greatly to the already heavy work of the staff, who consequently had to put in much overtime. It gives me great pleasure to report to Government that every member of the staff both technical and clerical worked well and efficiently throughout the year.

P. B. ADVANI,
Director of Industries.

Bombay, 16th July 1940.

APPENDIX A.

Expenditure on peripatetic Handloom Weaving and Dyeing Institutions.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles, etc.	2,634 7 3	(*i*) Pay of officers ..	....
(*ii*) Fees from students* ..	....	(*ii*) Pay of establishment, i.e., Weaving Assistants, Masters, Demonstrators, etc.	27,584 11 0
(*iii*) Miscellaneous ..	....		
		(*iii*) Wages of workmen ..	1,223 12 1
		(*iv*) Allowances and Honoraria.	4,151 14 0
		(*v*) Scholarships and prizes ..	1,022 0 0
		(*vi*) Stores purchased ..	5,099 14 4
		(*vii*) Other miscellaneous expenses.	3,749 4 8
Total ..	2,634 7 3	Total ..	42,831 8 1

* Instructions in all institutions are imparted free of charge.

APPENDIX B.

Expenditure on the Government Hand Weaving Institute, Poona.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles, etc.	....	(*i*) Pay of officers	....
(*ii*) Fees from students* ..	....	(*ii*) Pay of establishment, Teaching staff, etc.	7,094 6 0
(*iii*) Miscellaneous ..	10 0 0	(*iii*) Wages of workmen ..	120 0 0
		(*iv*) Allowances and Honoraria.	615 14 0
		(*v*) Scholarships and Prizes ..	1,941 3 0
		(*vi*) Stores purchased ..	548 12 6
		(*vii*) Other miscellaneous expenses.	2,510 1 9
Total ..	10 0 0	Total ..	12,830 5 3

* Instruction is imparted free of charge.

APPENDIX C.

Expenditure on Village Tanning Demonstration Parties.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of tanned hides and skins, etc.*	231 13 9	(*i*) Pay of Officers ..	3,628 11 0
(*ii*) Fees from students† ..	....	(*ii*) Pay of establishment, i.e., Demonstrators, etc.	5,806 0 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen ..	....
		(*iv*) Allowances and Honoraria.	1,266 6 0
		(*v*) Stores purchased ..	254 7 0
		(*vi*) Scholarships and prizes ..	....
		(*vii*) Miscellaneous and other expenses.‡	1,535 12 9
Total ..	231 13 9	Total ..	12,491 4 9

* Leather worth Rs. 192-7-6 was sold to the Government Tanning Institute, Bandra, Bombay 20.

† Instruction in all the Demonstrations is imparted free of charge.

‡ This includes grant-in-aid for helping tanners with sheds and implements.

APPENDIX D.

Expenditure on and receipts from the Cane and Bamboo Demonstration.

Credit. *Debit.*

Particulars	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles, etc.	....	(*i*) Pay of officers ..	....
(*ii*) Fees from students* ..	....	(*ii*) Pay of establishment, i.e., Teaching staff, etc.	1,020 0 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen ..	24 0 0
		(*iv*) Allowances and Honoraria.	....
		(*v*) Scholarships and Prizes ..	226 0 0
		(*vi*) Stores purchased ..	205 0 0
		(*vii*) Other miscellaneous expenses.	237 3 4
Total ..	....	Total ..	1,712 3 4

* Instruction is imparted free of charge.

APPENDIX E.

Expenditure on and receipts from the Lacquer Work Demonstration.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles, etc.	....	(*i*) Pay of officers ..	....
(*ii*) Fees from students* ..	....	(*ii*) Pay of establishment ..	1,320 0 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen ..	28 1 0
		(*iv*) Allowances and Honoraria.	169 10 0
		(*v*) Scholarships and Prizes ..	268 5 0
		(*vi*) Stores purchased ..	490 1 8
		(*vii*) Other miscellaneous expenses.	316 13 5
Total ..	....	Total ..	2,592 15 1

* Instruction is imparted free of charge.

APPENDIX F.

Expenditure on and receipts from the Coir Manufacture School.

Credit.				*Debit*		
Particulars.	Amount.			Particulars.	Amount.	
	Rs.	a.	p.		Rs.	a. p.
(*i*) Sale proceeds of articles, etc.	2	2	0	(*i*) Pay of officers ..	....	
(*ii*) Fees from students* ..	....			(*ii*) Pay of establishment ..	2,984	6 0
(*iii*) Miscellaneous ..	....			(*iii*) Wages of workmen ..	48	0 0
				(*iv*) Allowances and Honoraria.	411	13 0
				(*v*) Scholarships and Prizes ..	490	10 0
				(*vi*) Stores purchase ..	52	4 9
				(*vii*) Other miscellaneous expenses.	255	4 9
Total ..	2	2	0	Total ..	4,242	6 6

* Instruction is imparted free of charge.

Statement showing Membership, Capital, Advances from Government and Loans from Bank, relating to different Associations under the Marketing Scheme for Handloom Products.

Name of the Association.	Membership as on		Share capital as on		Advances from Government for capital as on		Loans from Banks as on	
	31st March 1939.	31st March 1940.	31st March 1939.	31st March 1940.	31st March 1939.	31st March 1940.	31st March 1939.	31st March 1940.
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
North Central Divisional Industrial Co-operative Association Ltd., Ahmednagar.	545	546	1,288 7 0	1,453 8 0	8,000 0 0	10,000 0 0	12,377 15 7	8,248 13 10
The Industrial Co-operative Association, Ltd., Southern Division, Hubli ..	240	248	1,224 0 0	1,272 0 0	6,000 0 0	8,000 0 0	2,948 0 0	*Nil.*
The Northern Divisional Industrial Co-operative Association, Ltd., Ahmedabad ..	178	222	904 0 0	1,016 0 0	4,000 0 0	6,000 0 0	*Nil.*	*Nil.*
The Sholapur District Industrial Co-operative Association, Ltd., Sholapur ..	405	405	11,100 8 0	11,035 4 6	*Nil.*	*Nil.*	*Nil.*	2,305 13 0
The Industrial Co-operative Association, Ltd., Yeola (Nasik District) ..	251	280	5,000 0 0	5,051 12 0	*Nil.*	2,000 0 0	*Nil.*	4,664 6 6
The Industrial Co-operative Association, Ltd., Malegaon (Nasik District) ..	237	264	2,557 15 0	2,601 9 0	2,000 0 0	2,000 0 0	*Nil.*	2,290 2 0
The Bijapur District Industrial Co-operative Association, Ltd., Kamatgi ..	168	197	1,705 0 0	1,789 13 0	2,000 0 0	2,000 0 0	*Nil.*	3,200 0 0
The Industrial Co-operative Association Ltd., Belgaum	..	197	....	2,021 0 0	....	2,000 0 0	....	500 0 0

APPENDIX H.

Statement showing sales of raw materials, finished products, gross profits, etc., under the Marketing Scheme for Handloom Products.

Name of the Association.	Sales.						Gross profit.	
	Raw materials.		Finished products.		Total.			
	1938-39.	1939-40.	1938-39.	1939-40.	1938-39.	1939-40.	1938-39.	1939-40.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
North Central Divisional Industrial Co-operative Association Ltd., Ahmednagar	19,312 9 0	8,562 13 9	15,269 13 3	19,245 5 0	34,582 6 3	27,808 2 9	1,681 10 6	1,654 12 9
The Industrial Co-operative Association Ltd., Southern Division, Hubli	14,275 9 6	5,500 8 9	8,577 2 6	7,092 7 0	22,852 12 0	12,592 15 9	427 14 3	421 14 0
The Northern Divisional Industrial Co-operative Association Ltd., Ahmedabad	1,535 14 0	2,642 0 3	7,088 3 6	5,999 6 9	8,624 1 6	8,641 7 0	315 0 0	550 0 0
The Sholapur District Industrial Co-operative Association Ltd., Sholapur	41,771 12 6	16,332 4 9	4,513 8 3	11,432 11 3	46,285 4 9	27,765 0 0	560 6 0	1,619 13 9
The Industrial Co-operative Association Ltd., Yeola (District Nasik)	813 13 0	13,239 10 0	1,163 13 6	12,310 4 3	1,977 10 6	25,549 14 3	36 13 3	2,096 8 0
The Industrial Co-operative Association Ltd., Malegaon (District Nasik)	768 11 6	3,312 11 9	1,233 14 6	5,419 6 3	2,002 10 0	8,732 2 0	197 1 0	817 0 3
The Bijapur District Industrial Co-operative Association Ltd., Kamatgi	1,082 2 3	464 15 9	34 15 6	3,126 2 6	1,117 1 9	3,591 2 3	2 9 6	194 4 4
The Industrial Co-operative Association Ltd., Belgaum ..	....	1,227 13 9	....	7,672 0 9	....	8,899 14 6	....	643 15 0

APPENDIX I.

RECOGNISED TECHNICAL AND INDUSTRIAL INSTITUTIONS IN THE PROVINCE OF BOMBAY DURING 1939–40.

		Grants sanctioned in 1939–40.	
		Recurring.	Non-Recurring.
	(a) Schools run by Local Bodies Receiving grant-in-aid from the Department of Industries, Bombay.		
		Rs.	Rs. a. p.
1.	F. S. Parekh Technical Institute, Surat	5,412	862 8 0
2.	V. J. Municipal Technical School, Poona	2,560	....
3.	D. L. Board Industrial School, Satara	1,358	....
4.	Robertson School of Industry, Pandharpur	833	....
5.	King Edward VII Technical School, Dhulia	4,292	....
6.	School of Industry, Ratnagiri	6.915	....
7.	Municipal Technical School, Sholapur	2,415	....
	(b) Schools managed by Private Bodies receiving grant-in-aid from the Department of Industries, Bombay.		
8.	Salvation Army Weaving School, Kaira Camp	514	....
9.	I. P. Mission Industrial School, Borsad	751	....
10.	Vocational Training School, Ankleshwar	777	..
11.	Mahajan Home Industrial School, Surat ..	520	....
12.	A. R. Sonawala Industrial School, Bordi	1,100	....
13.	Am. Wes. Mission Industrial School, Sanjan	220	....
14.	Textile Technical School, Parel, Bombay	1,499	....
15.	S. A. Willingdon Boys' Industrial Home, Bombay ..	475	....
16	Bhagini Samaj, Bombay	137	....
17.	Dadar School for the Blind, Bombay	845	....
18.	N. S. D. Industrial Home for the Blind, Bombay	460	....
19.	S. P. G. Mission Industrial School, Ahmednagar	1,523	....
20.	S. A. Boys' Industrial School, Ahmednagar	398	....
21.	Industrial Classes attached to Modern High School, Ahmednagar	95	300 0 0
22.	St. Barnabas Industrial School, Manmad	910	....
23.	Mission Industrial School, Poona	856	....

APPENDIX I—*contd.*

		Grants sanctiond in 1939-40.	
		Recurring.	Non-Recurring.
		Rs.	Rs. a. p.
24.	Technical Institute attached to Fergusson College, Poona ..	871	....
25.	School of Radio Physics and Electronics, Poona	555	1,822 8 0
26.	Sir D. M. Petit Industrial School, Sirur	681	....
27.	K. E. S. Topiwala Industrial School, Alibag	1,666	....
28.	K. E. S. Vithoba Khandoba High School, Typography Class, Panvel	135	....
29.	Maharashtra Mudran Shala, Poona	696	....
30.	Primary Handi Crafts Classes, Bombay, ...	1,209	....

(c) Schools run by Local Bodies not receiving grant-in-aid but recognised by the Department of Industries.

31. Thana School Board's Carpentry Class at Dahanu.
32. Thana School Board's Carpentry Class at Mokhada.
33. Thana School Board's Carpentry Class at Shahapur.

(d) Schools managed by Private Bodies not receiving grant-in-aid but recognised by the Department of Industries.

34. Chimanlal Nagindas Industrial School, Ahmedabad.
35. Jyoti Sangh, Ahmedabad.
36. Ideal Tailor and Cutter Institute, Ahmedabad.
37. Parsi Technical and Industrial Institute, Surat.
38. Radio Electric Institute, Bombay.
39. N. G. Rao's English Tailoring College, Bombay.
40. J. N. Petit Parsi Orphanage, Lal Bag, Bombay.
41. E. M. F. Radio Institute, Bombay.
42. Institute Indo-Portuguese, Bombay.
43. Khalsa College Bombay Technical Institute, Bombay
44. Chicago Radio Institute, Bombay.
45. R. H. Patuck Industrial School, Andheri.
46. Zarapkar Tailoring and Cutting Institute, Bombay
47. Mahomed Hajee Saboo Siddik Institution, Bombay.
48. Mahila Kala Mandir, Bombay.
49. Institute of Radio Technology, Bombay.
50. National Industrial School, Bombay.

APPENDIX I—*concld.*

51. Bai Avabai Framji Petit Parsi Girls' Orphanage, Bandra.
52. R. G. Tamhankar's Wireman's Class, Ahmednagar.
53. Jadhav College of Tailoring and Cutting, Poona.
54. Victoria Tailoring and Cutting College, Poona.
55. Zarapkar Tailoring and Cutting Institute, Poona.
56. Pandharpur Electric Supply Company's Wiremen's Class, Pandharpur.
57. Poona School and Home for the Blind, Poona.
58. National Tailoring and Cutting Institute, Hubli.
59. Industrial Classes attached to Marine High School, Novha.

(e) Government Reformatory and Settlement Schools.

60. David Sassoon Industrial School, Bombay.
61. Yeravda Industrial School, Yeravda, Poona.
62. Industrial Settlement School, Sholapur.
63. Industrial Settlement School, Bijapur.
64. Industrial Settlement School, Hubli.

(f) Government Technical and Industrial Schools controlled by the Department of Industries.

65. R. C. Technical Institute, Ahmedabad.
66. Government Tanning Institute, Khar, Bombay.
67. Government Leahter Working School, Khar, Bombay.
68. Government Hand Weaving Institute, Poona.

(g) Industrial Institutions and Classes recognised for examinations only.

69. B. N. Gamadia Parsi Hunnar Shala, Bombay.
70. Municipal Byculla Marathi Central School, Byculla, Bombay.
71. Municipal Ghodapdeo Marathi Central School, Bombay.
72. Municipal Khetwadi Marathi Central School, Bombay.
73. Municipal Foras Road Marathi Central School, Bombay.
74. Municipal Lamington Road Gujarati Central School, Bombay.
75. Municipal Marathi Parel Central School, Bombay.
76. Municipal Lady Jamshedji Road Central School, Bombay.
77. Municipal R. C. Mahim Urdu Central School, Bombay.
78. Municipal Imamwada Central School, Bombay.

APPENDIX J.

COURSES OF INSTRUCTION RECOGNISED BY THE DEPARTMENT OF INDUSTRIES THROUGH THE COMMITTEE OF DIRECTION FOR TECHNICAL AND INDUSTRIAL TRAINING.

1. Mechanical Engineering.
2. Electrical Engineering.
3. Automobile Engineering.
4. Internal Combustion Engineering.
5. (*a*) Higher Grade Textile Manufacture, Cotton Spinning.
   (*b*) Higher Grade Textile Manufacture, Cotton Weaving.
6. Mechanical Apprentice Course.
7. Automobile Apprentice Course.
8. Trained Maistry Course.
9. (*a*) Carpentry A Course.
   (*b*) Carpentry B Course.
   (*c*) Carpentry C Course.
10. Agricultural Carpentry and Smithy.
11. Wood turning and Lacquering.
12. Typography (Composition and Printing).
13. (*a*) Lower Grade Cotton Spinning.
   (*b*) Lower Grade Cotton Weaving.
14. Handloom Weaving.
15. Dyeing and Calico Printing.
16. Practical Tailoring.
17. Lady's Tailoring.
18. Tailoring and Cutting.
19. Wireman's Apprentice Course.
20. Electrician's Course.
21. Radio Communication.
22. Electroplating and Battery-charging.
23. Leather Work (*a*) Advanced Course.
   (*b*) Artisan ,,
24. Tanning (*a*) Advanced Course.
   (*b*) Artisan. ,,
25. Pigments, Paints and Varnishes

APPENDIX K.

Statement showing Expenditure on and receipts from the R. C. Technical Institute, Ahmedabad, for the year 1939-40.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(1) Sale proceeds of article, etc.	116 3 0	(1) Pay of Officers (Principal).	7,500 0 0
(2) Fees from students ..	3,975 4 0	(2) Pay of Establishment—	
(3) Miscellaneous contributions.	156 5 0	Teachers	16,142 14 0
		Clerks	1,112 5 0
		Peons	444 0 0
		Leave salary	902 9 0
		(3) Wages of workmen ..	....
		(4) Allowance (T. A.) ..	57 2 0
		Honoraria, etc. ..	75 0 0
		(5) Scholarships	699 11 0
		Refunding of fees as free-ships	510 0 0
		(6) Stores purchased ..	3,887 0 10
		(7) Other Miscellaneous—	
		Menials paid from contingencies	2,178 7 0
		Other contingent expenditure	739 9 6
Total ..	4,247 12 0	Total ..	34,248 10 4

APPENDIX L.

Expenditure on and receipts from the Government Tanning Institute, Bandra, Bombay 20.

Credit.				*Debit.*			
Particulars.	Amount.			Particulars.	Amount.		
	Rs.	a.	p.		Rs.	a.	p.
1. Sale proceeds of tanned hides and skins* ..	4,464	15	7	1. Pay of Officers ..	....		
2. Fees from students† ..	....			2. Pay of establishment ..	6,217	1	0
				3. Wages of workmen ..	207	13	0
3. Miscellaneous contributions for scholarships‡ ..	1,380	0	0	4. Allowances, Honoraria, etc.	295	11	0
				5. Scholarships	2,711	1	0
				6. Store purchased ..	21,818	4	6
				7. Other miscellaneous expenses	2,330	0	6
Total ..	5,844	15	7	Total ..	33,579	15	0

*Leather worth Rs. 1,011-10-10 was supplied to the Government Leather Working School, Bandra. free of charge; hence actual receipts were Rs, 3,453-4-9.

†No fees are charged.

‡Donations from private parties for award of scholarships at the Government Tannin Institute, Bandra, Bombay 20.

APPENDIX M.

Expenditure on and receipts from Government Leather Working School, Khar.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
1. Sale proceeds	896 2 3	1. Pay of Officers—	
2. Fees from students ..	105 0 0	(*a*) Superintendent ..	2,435 0 0
3. Miscellaneous ..	....	(*b*) Assistant Superintendent	62 9 0
		2. Pay of establishment—	
		(*a*) Teaching staff ..	2,222 6 0
		(*b*) Clerk	584 7 0
		(*c*) Servants	488 0 0
		Leave salary	11 5 0
		3. Wages of workmen ..	....
		4. Allowances and Honoraria, etc.	496 3 0
		5. Travelling allowance ..	596 14 0
		6. Scholarships	3,154 0 0
		7. Stores purchased	1,478 7 0
		8. Other miscellaneous menials paid from contingencies	80 0 0
		9. Other miscellaneous contingent expenditure such as leather, fittings, conveyance charges, etc. ..	2,743 9 3
Total ..	1,001 2 3	Total ..	14,352 12 3

APPENDIX N.

Statistics showing the different varieties and quantities of fish (in lbs.) brought by the launches during 1939-40.

Varieties of Fish.	Names of Launches.									
	Sir Frederick. Sykes.	Lady Sykes.	Lady Brabourne.	Lord Brabourne.	Hydari.	Chandtara.	Noore-mohomedi.	Karimi.	Khajahind.	Total.
Bangda (Mackerel) ..	184,250	100,683	254,515	400,490	3,000	208,500	353,250	239,286	216,062	1,960,036
Hulva (Black Pomp-fret).	440	2,853	33,158	48,445	....	13,000	42,000	33,040	13,600	186,536
Sarga (Pomfrets) ..	3,887	....	13,010	6,646	78,734	15,000	5,000	866	....	123,143
Daras ..	31,890	....	7,800	27,600	....	....	....	....	....	67,290
Bhing (Herring) ..	690	....	5,430	3,432	....	1,919	18,602	21,220	120	51,413
Surmai (Seer) ..	699	2,160	3,670	11,195	....	2,500	5,245	7,481	252	33,202
Pedwa ..	....	....	7,500	200	....	1,680	11,875	4,200	....	25,455
Tarli (Sardine) ..	....	..	10,620	10,425	....	....	....	720	....	21,765

Dodha ..	....	7,500	....	....	....	....	....	....	....	7,500
Datali ..	728	....	2,890	2,692	....	....	....	146	....	6,456
Shol ..	85	....	1,050	1,075	....	....	....	2,158	....	4,368
Kuppa (Tunny) ..	35	....	2,192	830	....	....	....	860	....	3,917
Dagol ..	60	....	751	520	....	....	....	740	....	2,071
Prawns ..	....	1,100	250	....	....	....	....	....	....	1,350
Tower ..	15	....	50	....	....	....	....	616	....	681
Koti ..	60	....	....	360	....	....	....	....	....	420
Sakla ..	60	....	100	100	....	....	....	....	....	260
Rawas (Salmon) ..	95	....	46	25	....	....	....	43	....	209
Miscellaneous fish ..	....	....	10	1,369	....	....	20	7,008	....	8,407
Total ..	222,994	114,296	343,042	515,404	81,734	242,599	435,992	318,384	230,034	2,504,479

APPENDIX O.

Statement of account of the Model Fish Curing sheds at Malwan and Majali, during six months ended March 31, 1940.

Expenditure.	Rs. a. p.	Receipts.	Rs. a. p.
Pay of master curers and fishermen assistants	546 10 0	Receipts realised by sale of fish cured at the model fish curing sheds	434 0 5
Maintenance and repairs of the model fish curing shed buildings	51 9 3	Receipts expected to be realised by the sale of cured fish brought to Bombay for sale..	69 0 0
Contingent expenditure on account of cost of fish, salt, gutting and other miscellaneous charges for curing fish at the sheds	338 12 3		503 0 5
		Excess of expenditure over receipts	433 15 1
Total ..	936 15 6	Total ..	936 15 6

The Model Fish Curing Sheds are established at Malwan and Majali to demonstrate improved methods of fish curing to the fishermen. The sheds are not, therefore, expected to be self-supporting (*vide* Government Memorandum, General Department, No. 2355/33-4, dated 4th January 1940).

APPENDIX P

APPENDIX P.

Pro forma Account of the Fish Curing Yards for the year ended on 31st March 1940.

Expenditure.			Receipts.	
Details of Expenditure.		Amount.	Details of Receipts.	Amount.
		Rs.		Rs.
Opening stock of salt		22,331	Total amount remitted to Treasury	98,663
Purchase and transport charges of salt		38,059	*Add*—Overtime fees recovered from fish curers shown as less receipts in the account for the year 1938–39	99
Petty construction and repairs—				
	Rs.		Gross receipts ..	98,762
Departmental	6,321			
Add—Public Works Department ..	1,366		*Less*:—	
	7,687		(1) Overtime fees recovered from fish curers during 1939–40 to be disbursed to staff during 1940–41 .. .. Rs. 165	

Less—Expenditure on model fish curing sheds	2,711	4,976	(2) Receipts on account of model fish curing sheds at Malwan and Majali ..	434	599
Other non-contract contingencies ..	2,848				
Add—Cost of stationery and forms ..	566				
	3,414				
Less—Expenditure on model fish curing sheds	339	3,075			
Pay of yard and supervising establishment	30,119				
Less—Pay of establishment at model fish curing sheds	547	29,572			
Travelling allowance of yard and supervising establishment		853			
House rent, Honorarium etc. to the yard establishment		766			
Escort charges of salt		1,384			
Total expenditure during 1939–40 ..		1,01,016			

APPENDIX P—*contd.*

Expenditure.			Receipts.	
Details of Expenditure.		Amount.	Details of Receipts.	Amount.
		Rs.		
Add—Pensionary charges at 8 1/6 per cent. of the maximum pay of establishment		2,957		
		1,03,973		
	Rs.			
Less—Cost of salt in stock at yards on 31st March 1940 after close of transactions ..	24,142			
Deduct—Cost of salt actually not paid during 1939–40 but to be paid in 1940–41 ..	2,508	21,634		
Net expenditure at the yards		82,339		
Add—Net profit during the year		15,824		
Total, Net Expenditure ..		98,163	Total, Net Receipts ..	98,163

APPENDIX Q

APPENDIX Q.

Statement showing operations of the Fish Curing Yards in the Ratnagiri and Kanara Districts of the Bombay Province for the year ended on 31st March 1940.

Serial No.	Name of the yard.	Year.	Quantity of fish brought to be cured.	Quantity of salt issued.	Quantity of fish removed.	Proportion of fish to each maund of salt.	Total expenditure at the yard including pension contribution.	Receipts: Amount realised by sale of salt.	Receipts: Miscellaneous receipts.	Stock of salt at the close of the year.	Value of salt in stock at the close of the year.	Total of Cols. 9, 10 and 12.
1	2	3	4	5	6	7	8	9	10	11	12	13
	Ratnagiri District.		Mds. s. t.	Mds. s. t.	Mds. s.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Mds. s. t.	Rs. a. p.	Rs. a. p.
1	Borla	1938-39..	2,418 0 0	806 0 0	1,813 20 0	3·16	1,294 13 9	806 0 0	15 12 0	1,178 26 0	512 6 5	1,334 2 5
		1939-40..	4,754 0 0	1,584 0 0	3,565 20 0	3·00	2,025 13 1	1,679 14 6	7 0 0	1,312 38 0	602 3 8	2,289 2 2
				(a) 24 10 0				(a) 12 8 0				(a) 12 8 0
2	Jaigad	1938-39	12,543 0 0	4,178 0 0	9,407 10 0	3·30	3,642 10 3	4,178 0 0	1 0 0	2,737 2 0	1,080 12 11	5,259 12 11
				(a) 19 16 0				(a) 5 0 0				(a) 5 0 0
		1939-40..	24,340 20 0	8,132 20 0	18,255 15 0	2·99	5,968 12 4	8,529 3 0	11 14 0	2,432 7 0	1,123 3 8	9,664 4 8
3	Varoda	1938-39..	2,118 0 0	706 0 0	1,588 20 0	3·00	1,440 12 10	706 0 0	2 2 0	670 5 0	275 5 7	983 7 7
				(a) 23 11 0				(a) 12 0 0				(a) 12 0 0
		1939-40..	2,484 0 0	828 0 0	1,863 0 0	3·00	1,862 6 5	866 15 6	6 9 0	554 11 0	276 7 3	1,149 15 9
				(a) 72 30 0				(a) 37 8 0				(a) 37 8 0
4	Kalbadevi ..	1938-39..	984 0 0	328 0 0	738 0 0	3·06	983 4 3	328 0 0	....	662 32 0	277 8 7	605 8 7
							*80 0 0					
		1939-40..	4,485 0 0	1,495 0 0	3,363 30 0	3·00	1,288 5 2	1,581 3 0	0 3 0	808 20 0	400 10 6	1,982 0 6
				(a) 38 32 0			*80 0 0	(a) 20 0 0				(a) 20 0 0

5	Ratnagiri ..	1938-39..	24,309 0 0	8,155 0 0	18,231 30 0	3·20	5,920 9 5	8,155 0 0	....	4,772 13 0	2,014 4 2	10,169 4 2
				(a) 106 28 0			*622 4 0	(a) 50 0 0				(a) 50 0 0
		1939-40..	27,867 0 0	9,293 0 0	20,900 10 0	3·28	6,491 14 3	9,744 9 0	0 7 0	5,091 38 0	2,420 10 7	12,165 10 7
				(a) 12 24 40			*342 12 6	(a) 6 8 0				(a) 6 8 0
6	Purnagad ..	1938-39..	1,854 0 0	618 0 0	1,390 20 0	3·00	1,655 2 2	618 0 0	2 8 0	1,011 33 0	405 2 0	1,025 10 0
				(a) 19 16 0				(a) 10 0 0				(a) 10 0 0
		1939-40..	3,658 20 0	1,219 20 0	2,743 35 0	3·01	1,863 12 9	1,281 7 0	1 4 0	1,240 29 0	568 6 1	1,851 1 1
				(a) 101 34 0				(a) 52 8 0				(a) 52 8 0
7	Jaitapur ..	1938-39..	9,354 0 0	3,118 0 0	7,015 20 0	3·00	2,657 8 0	3,118 0 0	0 8 0	3,372 17 0	1,383 10 9	4,502 2 9
		1939-40..	6,846 0 0	2,282 0 0	5,134 20 0	3·00	2,768 13 11	2,371 6 6	5 0 0	2,977 33 0	1,340 3 0	3,716 9 6
				(a) 58 8 0				(a) 30 0 0				(a) 30 0 0
8	Vijaydurg ..	1938-39..	7,647 0 0	2,549 0 0	5,735 10 0	3·00	2,554 3 10	2,549 0 0	3 0 0	1,649 9 0	667 0 2	3,219 0 2
				(a) 9 28 0				(a) 5 0 0				(a) 5 0 0
		1939-40..	7,858 20 0	2,619 20 0	5,893 35 0	3·00	2,150 1 3	2,745 0 0	7 10 0	881 13 0	409 3 0	3,161 13 0
				(a) 87 12 0				(a) 45 0 0				(a) 45 0 0
9	Mumbri ..	1938-39..	752 20 0	150 20 0	564 15 0	5·00	1,108 14 2	150 8 0	4 8 0	523 32 0	294 9 5	449 9 5
				(a) 111 22 0				(a) 15 0 0				(a) 15 0 0
		1939-40..	1,252 20 0	250 20 0	939 15 0	5·00	1,411 11 3	265 2 0	6 4 0	606 24 0	324 2 6	595 8 6
				(a) 61 4 32				(a) 31 8 0				(a) 31 8 0
	Carried over ..											

*Expenditure incurred by the P.W.D. on structures at the yards transferred to their control. (a) Denatured salt issued to agriculturists.

Serial No.	Name of the yard.	Year.	Quantity of fish brought to be cured.	Quantity of salt issued.	Quantity of fish removed.	Proportion of fish to each maund of salt.	Total expenditure at the yards including pension contributions.	Receipts.				
								Amount realised by sale of salt.	Miscellaneous receipts.	Stock of salt at the close of the year.	Value of salt in stock at the close of the year.	Total of Cols 9, 10 and 12.
1	2	3	4	5	6	7	8	9	10	11	12	13
	Brought forward ..		Mds. s. t.	Mds. s. t.	Mds. s. t.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Mds. s. t.	Rs. a. p.	Rs. a. p.
	Ratnagiri District.—contd.											
10	Mithbao ..	1938-39..	1,445 0 0	289 0 0	1,083 30 0	5·00	1,316 2 7	289 0 0	1 0 0	676 26 0	336 11 10	626 11 10
				(a) 19 16 0				(a) 10 0 0				(a) 10 0 0
		1939-40..	5,642 20 0	1,134 20 0	4,231 35 0	4·09	1,654 9 0	1,184 13 0	0 6 0	943 23 0	463 0 2	1,648 3 2
				(a) 29 4 0				(a) 15 0 0				(a) 15 0 0
11	Achra	1938-39..	1,654 20 0	419 20 0	1,240 35 0	3·82	1,180 12 6	419 8 0	0 8 0	678 16 0	303 4 1	723 4 1
		1939-40..	2,104 20 0	618 20 0	1,578 15 0	3·40	1,604 4 6	654 4 6	0 11 0	1,235 36 40	629 3 7	1,284 3 1
12	Talasil	1938-39..	869 0 0	239 0 0	700 0 0	3·63	1,027 13 10	239 0 0	0 6 0	1,345 17 40	752 13 6	992 3 6
		1939-40..	2,030 20 0	564 20 0	1,530 10 0	3·59	1,536 0 7	590 6 0	6 5 0	1,557 7 40	846 5 4	1,443 0 4
13	Malwan ..	1938-39..	21,089 20 0	4,462 20 0	15,817 5 0	4·73	3,787 1 9	4,462 8 0	63 0 0	5,132 28 0	2,123 4 1	6,748 12 1
				(a) 81 19 16				(a) 52 0 0				(a) 52 0 0
		1939-40..	26,650 0 0	5,774 20 0	19,987 20 0	4·62	4,477 9 7	6,009 11 6	207 5 0	4,780 2 0	2,267 3 11	8,484 4 5
				(a) 280 13 16				(a) 134 8 0				(a) 134 8 0
14	Deobag ..	1938-39..	7,204 0 0	1,568 0 0	5,402 20 0	4·59	2,308 0 0	1,568 0 0	6 4 0	3,873 22 0	1,679 2 3	3,253 6 3
				(a) 24 10 0				(a) 8 0				(a) 12 8 0

		1939-40..	21,290 0 0	4,889 0 0	15,967 20 0	4·56	4,311 14 11	5,133 0 0	6 11 0	3,895 34 0	1,847 13 6	6,987 8 6
15	Mobar	1938-39..	3,195 20 0	788 20 0	2,396 25 0	4·05	1,969 11 6	788 8 0	2 2 0	2,664 2 40	1,186 14 11	1,977 8 11
		1939-40..	10,117 20 0	2,617 20 0	7,588 5 0	3·87	2,483 11 6	2,750 14 6	4 5* 0	1,967 26 0	933 5 6	3,688 9 0
				(a) 19 16 0				(a) 10 0 0				(a) 10 0 0
16	Kochra	1938-39..	984 20 0	214 20 0	738 15 0	4·59	1,637 6 0	214 8 0	1 3 0	555 21 0	284 4 1	499 15 1
		1939-40..	2,537 20 0	574 20 0	1,903 5 0	4·41	1,790 5 1	603 8 6	4 6 0	840 30 0	378 5 4	986 3 10
				(a) 14 22 0				(a) 7 8 0				(a) 7 8 0
17	Vengurla	1938-39..	7,836 0 0	1,965 0 0	5,877 0 0	3·99	1,437 15 5	1,965 0 0	1 10 0	2,946 16 20	1,399 9 9	3,366 3 9
				(a) 1,201 34 0			*224 0 0	(a) 401 0 0				(a) 401 0 0
		1939-40..	7,143 0 0	2,033 0 0	5,357 10 0	3·51	2,441 5 3	2,141 10 0	4 1 0	2,196 2 0	1,045 6 3	3,191 1 3
				(a) 869 4 40			*174 0 0	(a) 375 8 0				(a) 375 8 0
18	Shiroda ..	1938-39	3,973 0 0	935 0 0	2,979 30 0	4·25	1,842 8 0	935 0 0	6 11 6	1,886 2 0	928 6 8	1,870 2 2
				(a) 19 16 0				(a) 10 0 0				(a) 10 0 0
		1939-40..	9,074 20 0	2,436 20 0	6,725 35 0	3·72	2,803 6 10	2,575 14 6	6 13 0	1,643 16 0	832 14 1	3,415 9 7
				(a) 116 16 0				(a) 60 0 0				(a) 60 0 0
	Total Ratnagiri District.	1938-39..	1,10,229 20 0	31,489 20 0	82,720 25 0	..	37,765 6 3	31,489 8 0	212 2 6	36,377 0 20	15,905 3 2	47,606 13 8
				(a) 1,636 16 16			*926 4 0	(a) 582 8 0				(a) 582 8 0
		1939 40..	1,70,136 0 0	48,346 20 0	1,27,529 15 0	..	48,934 13 8	50,708 15 0	287 2 0	34,966 30 0	16,708 11 11	67,704 12 11
				(a) 1,785 30 48			*596 12 6	(a) 838 0 0				(a) 838 0 0

*Expenditure incurred by the P.W.D. on structures at the yards transferred to their control. (a) Denatured salt issued to agriculturists.

APPENDIX Q—*contd.*

Serial No.	Name of the yard.	Year.	Quantity of fish brought to be cured.	Quantity of salt issued.	Quantity of fish removed	Proportion of fish to each maund of salt.	Total expenditure at the yards including pension contribution.	Receipt.				
								Amount realised by sale of salt.	Miscellaneous receipts.	Stock of salt at the close of the year.	Value of salt in stock at the close of the year.	Total of Cols 9, 10 and 12.
1	2	3	4	5	6	7	8	9	10	11	12	13
	Kanara District.		Mds. s. t.	Mds. s. t.	Mds. s. t.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Mds. s. t.	Rs. a. p.	Rs. a. p.
19	Karwar (Baitkhol) ..	1938-39..	20,719 0 0	6,501 20 0	15,471 35 0	3·19	4,297 10 11	6,501 8 0	867 1 0	2,220 6 0	898 4 8	8,266 13 8
				(*a*) 1 37 45				(*a*) 1 0 0				(*a*) 1 0 0
		1939-40..	16,747 0 0	5,106 0 0	12,726 0 0	3·28	4,678 7 10	5,424 10 0	677 1 0	3,335 5 0	1,351 6 11	7,453 1 11
20	Majali	1938-39..	21,399 20 0	5,592 0 0	16,049 35 0	3·83	3,313 2 11	5,592 0 0	19 11 0	1,583 4 0	666 1 0	7,838 6 10
							*76 7 0					
		1939-40..	25,230 20 0	6,629 20 0	20,008 4 0	3·81	4,141 2 5	7,040 13 6	35 13 0	2,151 9 0	884 9 1	7,961 3 7
							*76 15 0					
21	Bingi	1938-39..	22,857 0 0	6,819 0 0	16,038 0 0	3·35	3,644 10 5	6,819 0 0	..	953 34 0	377 1 0	7,196 1 0
							*76 7 0					
		1939-40..	34,623 0 0	10,252 20 0	26,033 20 0	3·38	5,940 10 1	10,885 13 0	52 8 0	1,475 31 40	658 15 10	11,597 4 10
				(*a*) 9 28 0			*76 14 4	(*a*) 5 0 0				(*a*) 5 0 0
22	Chendia ..	1938-39..	16,286 0 0	4,958 0 0	11,328 0 0	3·28	3,024 4 11	4,958 0 0	5 0 0	1,887 13 0	733 1 0	5,696 1 0
							*76 7 0					

		1939-40..	23,322 20 0	7,144 20 0	16,092 0 0	3·26	4,178 1 3 *76 14 4	7,589 11 6	6 4 0	1,635 6 0	650 14 2	8,246 13 8
23	Kodar	1938-39..	352 20 0	114 20 0	241 15 0	3·08	845 2 2	114 8 0	0 12 6	1,308 17 0	673 5 4	788 9 10
		1939-40..	942 0 0	301 20 0	630 0 0	3·12	1,151 13 0	320 4 0	0 8 0	864 6 0	415 11 4	736 7 4
24	Hardwada ..	1938-39..	8,091 0 0	2,065 20 0	5,710 30 0	3·92	1,825 3 5 *76 6 0	2,065 8 0	19 12 0	1,551 30 0	643 2 8	2,728 6 8
		1939-40..	16,377 0 0	4,010 0 0	11,569 10 0	4·08	2,706 10 7 *76 14 4	4,260 10 0	34 4 0	1,689 35 0	704 5 9	4,999 3 9
25	Keni	1938-39..	2,386 0 0	762 0 0 (a) 32 0 32	1,802 0 0	3·13	1,331 5 3 *76 6 9	762 0 0 (a) 16 8 0	0 4 0	1,473 28 0	582 1 0	1,344 5 0 (a) 16 8 0
		1939-40..	4,398 0 0	1,311 0 0	3,356 25 0	3·35	1,341 4 6 *76 14 4	1,392 14 6	0 8 0	942 2 0	372 12 10	1,766 3 4
26	Gangawali ..	1938-39..	640 0 0	168 0 0 (a) 11 25 48	495 35 0	3·81	1,110 12 5	168 0 0 (a) 6 0 0	....	1,018 32 40	411 8 0	579 8 0 (a) 6 0 0
		1939-40..	1,058 20 0	272 20 0 (a) 14 22 0	821 35 0	4·03	916 10 0	289 6 6 (a) 7 8 0	....	731 30 40	295 8 11	584 15 5 (a) 7 8 0
	Carried over ..											

*Expenditure incurred by the P.W.D. on structures at the yards transferred to their control. (a) Denatured salt issued to agriculturists.

Serial No.	Name of the yard.	Year.	Quantity of fish brought to be cured.	Quantity of salt issued.	Quantity of fish removed.	Proportion of fish to each maund of salt.	Total expenditure at the yard including pension contribution.	Receipts.				
								Amount realised by sale of salt.	Miscellaneous receipts.	Stock of salt at the close of the year.	Value of salt in stock at the close of the year.	Total of Cols. 9, 10 and 12.
1	2	3	4	5	6	7	8	9	10	11	12	13
	Brought forward ..		Mds. s. t.	Mds. s. t.	Mds. s. t.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Mds. s. t.	Rs. a. p.	Rs. a. p.
27	Kumta	1938-39..	1,998 0 0	423 20 0	1,395 25 0	4·72	887 3 5	423 8 0	....	641 7 0	253 0 0	676 8 1
				(a) 24 10 0			*76 6 8	(a) 12 8 0				(a) 12 8 0
		1939 40..	4,324 0 0	992 0 0	3,423 30 0	4·36	1,438 2 6	1,044 5 0	....	1,330 30 0	551 5 9	1,595 10 9
				(a) 9 27 0			*76 14 4	(a) 5 0 0				(a) 5 0 0
28	Mallukurwa ..	1938-39..	5,525 0 0	925 0 0	4,600 0 0	5·97	1,266 8 8	925 0 0	7 12 0	1,412 38 0	579 12 5	1,512 8 5
							*76 6 9					
		1939-40..	9,110 20 0	1,637 0 0	7,919 20 0	5·57	1,265 7 0	1,723 3 0	4 8 0	526 6 0	213 4 0	1,940 15 0
				(a) 3 35 0			*76 14 4	(a) 2 0 0				(a) 2 0 0
29	Manki	1938-39..	3,320 0 0	740 0 0	2,490 0 0	4·73	1,132 11 6	740 0 0	12 14 0	799 39 0	335 2 7	1,088 0 7
				(a) 5 33 0				(a) 3 0 0				(a) 3 0 0
		1939-40..	8,258 20 0	1,710 20 0	61,193 35 0	4·83	1,685 15 2	1,798 7 0	12 0 0	864 18 0	349 8 3	2,159 15 3
				(a) 2 36 0				(a) 1 8 0				(a) 1 8 0

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30	Murdeshwar ..	1938-39..	2,567 20 0	525 20 0	2,057 0 0	4·89	1,143 6 2	525 8 0	16 1 6	1,119 31 0	481 2 2	1,022 11 8
				(a) 9 28 0			*76 6 9	(a) 5 0 0				(a) 5 0 0
		1939-40..	4,574 0 0	965 0 0	3,687 0 0	4·74	1,134 3 8	1,018 12 6	15 0 0	642 1 0	265 7 3	1,299 3 9
							*76 14 4					
31	Shirali	1938-39..	2,424 20 0	506 20 0	1,918 0 0	4·79	1,046 11 2	506 8 0	6 0 0	996 28 0	484 14 1	997 6 1
				(a) 36 34 40			*76 6 9					
		1939-40..	9,156 0 0	2,000 0 0	7,156 0	4·58	1,719 3 1	2,120 6 6	6 0 0	696 7 0	284 15 1	2,411 5 7
				(a) 3 35 0			*76 14 4	(a) 2 0 0				(a) 2 0 0
32	Bhatkal	1938-39..	5,592 0 0	1,374 0 0	4,218 0 0	4·07	1,241 0 11	1,374 0 0	19 1 0	605 13 0	255 2 2	1,648 3 2
				(a) 19 16 0			*76 6 9	(a) 10 0 0				(a) 10 0 0
		1939-40..	3,416 0 0	738 0 0	2,678 0 0	4·63	1,414 6 0	782 2 0	21 0 0	1,308 32 0	434 6 5	1,237 8 5
				(a) 1 37 48			*76 14 4	(a) 1 0 0				(a) 1 0 0
	Total Kanara District	1938-39..	1,14,158 0 0	31,475 0 0	83,816 15 0	..	26,109 8 3	31,475 0 0	974 5 0	17,573 10 40	7,373 10 2	39,822 15 2
				(a) 141 25 5			*764 4 2	(a) 54 0 0				(a) 54 0 0
		1939-40..	1,61,537 20 0	43,070 0 0	1,22,295 19 0	..	33,712 1 1	45,691 7 0	865 6 0	18,193 19 0	7,433 3 7	53,990 0 7
				(a) 46 20 48			*769 0 0	(a) 24 0 0				(a) 24 0 0
	Grand Total ..	1938-39..	2,24,387 20 0	62,964 20 0	1,66,537 0 0	..	63,874 14 6	62,964 8 0	1,186 7 6	53,910 10 60	23,278 13 4	87,429 12 10
				(a) 1,778 1 21			*1,690 8 2	(a) 636 8 0				(a) 636 8 0
		1939-40..	3,31,673 20 0	91,416 20 0	2,49,824 34 0	..	82,646 14 9	96,400 6 0	1,152 8 0	53,160 9 0	24,141 15 6	1,21,694 13 6
				(a) 1,832 11 16			*1,365 12 6	(a) 862 0 0				(a) 862 0 0

*Expenditure incurred by the P.W.D. on structures at the yards transferred to their control. (a) Denatured salt issued to agriculturists.

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